Appendix 1
Mitigation Monitoring Plan

Contents

Appendix 1A
North-of-the-Delta Offstream Storage Project
Mitigation Monitoring Plan

North-of-the-Delta Offstream Storage
Administrative Draft
Mitigation Monitoring Plan

Prepared by

California Department of Water Resources

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Mitigation Monitoring Plan

Introduction

This Mitigation Monitoring Plan (MMP) for the proposed North-of-the-Delta Offstream Storage (NODOS) Project has been prepared by the California Department of Water Resources (DWR) and the United States (U.S.) Department of Interior (DOI), Bureau of Reclamation (Reclamation). The agencies included a series of mitigation measures in the EIR/EIS for the proposed NODOS Project to minimize potential environmental impacts during Project construction, operation, and maintenance. Those mitigation measures are incorporated into this Mitigation Monitoring Plan, and are listed in Table 1.

This MMP will be used by DWR and Reclamation to ensure that each mitigation measure adopted as a condition for Project approval is implemented. This MMP meets the requirements of the California Environmental Quality Act (CEQA), as amended (Guidelines Section 15074(d)), which mandates the preparation of monitoring provisions for the implementation of mitigation assigned as part of Project approval or adoption.

Mitigation Implementation and Monitoring

DWR and Reclamation will be responsible for monitoring the implementation of the mitigation measures. Implementing measures assigned to mitigate impacts associated with the proposed Project is ultimately the responsibility of DWR and Reclamation, although for certain measures, others have been assigned the responsibility of actually implementing the measure.

DWR and Reclamation will retain primary responsibility for ensuring that the proposed Project meets the requirements of this MMP and other permit conditions imposed by participating regulatory agencies.

DWR and Reclamation will designate specific personnel who will be responsible for monitoring implementation of the mitigation measures that will occur during Project construction**.** The designated personnel will be responsible for submitting all documentation and reports to DWR and Reclamation in a timely manner necessary for demonstrating compliance with mitigation requirements. DWR and Reclamation will ensure that the designated personnel have authority to require implementation of mitigation requirements and will be capable of terminating Project construction activities found to be inconsistent with mitigation objectives or Project approval conditions.

DWR and Reclamation will be responsible for demonstrating compliance with other agency permit conditions to the appropriate regulatory agency. They will also be responsible for ensuring that construction personnel understand their responsibilities for adhering to the performance requirements of the mitigation plan and other contractual requirements related to the implementation of the mitigation measures as part of Project construction.

In addition to the prescribed mitigation measures, Table 1 lists each identified potential impact, the corresponding monitoring and reporting requirement, the party responsible for ensuring implementation of the mitigation measure, and the duration of the mitigation and monitoring effort. Detailed monitoring and reporting requirements associated with each mitigation measure are provided in the Appendix.

Mitigation Enforcement

DWR and Reclamation will be responsible for enforcing all mitigation measures. If alternative mitigation measures are identified that would be equally effective in mitigating the identified Project impacts, the implementation of these alternative measures will not occur until agreed upon by DWR and Reclamation.

Table 1
North-of- the-Delta Offstream Storage (NODOS) Project Mitigation Measure Monitoring Summary

Impact	Mitigation Measure	Mitigation Implementation Duration		Monitoring Duration		Responsibility	
		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Surface Water Quality							
Impact SW Qual-1: A Violation of any Water Quality Standards or Waste Discharge Requirements, a Change in Surface Water Quality Resulting in Adverse Effects to Designated Beneficial Uses of Surface Water, or Otherwise Substantially Degrade Surface Water Quality							
SW Qual-1a: Reservoir Sedimentation, Eutrophication, Oxygen Depletion, and Chemical Transformation	**SW Qual-1a**: Implement a Water Quality Monitoring, Modeling, and Operations Coordination Program to Protect Beneficial Uses	Prior to start of Project operation			Throughout Project operation	DWR and Reclamation	DWR and Reclamation
SW Qual-1b: Contamination from Inundation of Salt Lake	**SW Qual-1b**: Excavate and Remove or Consolidate and Cap Salt Lake	Prior to start of Project construction				DWR and Reclamation	
SW Qual-1c: Soil Disturbing Activities Contributing to Erosion and Increased Turbidity to Receiving Waters	**SW Qual-1c (1)**: Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout the project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-d: Material Stockpile Management that could Adversely Affect Surface Water Quality	**SW Qual-1c (1)**: Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1e: Hazardous Material Spills that could Adversely Affect Surface Water Quality	**SW Qual-1e**: Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1f: Temporary Diversion of Surface Waters that could Adversely Affect Surface Water Quality	**SW Qual-1f**: Implement BMPs Including Diversion Ditches, Berms, Pipelines, Sheet Piles, and Cofferdams	Prior to start of Project construction	Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-g: Temporary Dewatering of Shallow Groundwater	**SW Qual-1g**: Implement Caltrans Field Guide to Construction Site Dewatering		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1h: Concrete Waste that could Adversely Affect Surface Water Quality	**SW-Qual-1h**: Implement Concrete Waste Management BMPs		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1i: Vehicle and Equipment Cleaning Activities that could Adversely Affect Surface Water Quality	**SW Qual-1i**: Implement Vehicle and Equipment Cleaning Procedures and Practices		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1j: Vehicle and Equipment Fueling Activities that could Adversely Affect Surface Water Quality	**SW Qual-1j**: Implement Vehicle and Equipment Fueling Procedures and Practices		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation

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SW Qual-1k: Vehicle and Equipment Maintenance Activities that could Adversely Affect Surface Water Quality	**SW Qual-1k**: Implement Vehicle and Equipment Maintenance Procedures and Practices		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
SW Qual-1l: Pile Driving Activities that could Adversely Affect Surface Water Quality	**SW Qual-1l**: Implement Appropriate Pile Driving Procedures and Practices		Throughout Project construction			Construction contractor or Reclamation	
	SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction contractor or Reclamation	DWR and Reclamation
Flood Control and Management							
Flood-1: Substantially Alter the Existing Drainage Pattern of the Site or Project Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner which would Result in Flooding On- or Off-Site.	**Flood-1**: Maintain Permanent Low Flow Releases into Stone Corral and Funks Creeks Downstream of Sites and Golden Gate Dams		Throughout Project operation			DWR and Reclamation	
Groundwater Resources							
GW Res-2: Increases in Groundwater Levels Resulting in Adverse Effects to Environmental Conditions and/or Existing Land Uses or Planned Uses	**GW Res-2**: Monitor and Lower Groundwater Levels as Necessary	Prior to filling reservoirs			Throughout Project operation	DWR or Reclamation	DWR or Reclamation
Bot-1f: Alkaline Wetland	**Bot-1d**: Conduct Groundwater Hydrological Studies	Prior to start of Project construction			During first five to ten years of Project operation	DWR and Reclamation	DWR and Reclamation
Groundwater Quality							
Impact GW Qual-1: A Violation of any Water Quality Standards or Waste Discharge Requirements, a Change in Groundwater Quality Resulting in Adverse Effects to Designated Beneficial Uses of Groundwater, or Otherwise Substantially Degrade Groundwater Quality							
GW Qual-1a: Hazardous Materials	**SW Qual-1e:**: Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of Project construction	Throughout Project construction		Throughout Project construction	Construction Contractor or Reclamation	Reclamation
GW Qual-1b: Abandoned Wells, Septic Systems, or Underground Storage Tanks	**GW Qual-1b**: Implement DWR and County Standards for the Proper Abandonment of Wells, Boreholes, and Septic Systems		Throughout Project construction			DWR and Reclamation	
GW Qual-1c: Dewatering	**GW Qual-1c**: Implement Caltrans Field Guide to Construction Site Dewatering		Throughout Project construction			Construction Contractor or Reclamation	
GW Qual-1d: Underground Utilities	**GW Qual-1d**: Identify Underground Utilities Prior to Start of Construction	Prior to start of construction				Construction Contractor or Reclamation	
GW Qual-1e: Septic System, Leach Field, and Vault Toilet Construction	**GW Qual-1e**: Construct Septic Systems, Leach Fields, and Vault Toilets in Accordance with County Permit Specifications	Prior to final design			Throughout the Project operation	Construction Contractor or Reclamation	DWR and Reclamation
Aquatic Biological Resources							
Fish-1: A substantial adverse effect (either directly, through habitat modifications, by interfering with the movement of native fish species, or by impeding the use of native fish nursery/rearing sites) on any fish species of primary management concern, including species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG, NMFS or USFWS.							
Fish-1a: Temperature Effects	**Fish-1a**: Increase Stocking Frequency of Coldwater Fish Species						
Fish 1b: Reduced Flows	**Fish-1b**: Prepare and Implement a Mitigation Monitoring and Reporting Plan	Prior to the start of construction			Throughout Project operation	DWR and Reclamation	DWR and Reclamation

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Fish-1c: Erosion, Sedimentation and Turbidity	**Fish-1c**: Prepare and Implement a Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan prior to the initiation of construction activities	Prior to the start of construction	Throughout Project construction			Construction Contractor or Reclamation	
Fish-1d: Hazardous Materials and Chemical Spills	**Fish-1c**: Prepare and Implement a Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan prior to the initiation of construction activities	Prior to the start of construction	Throughout Project construction			Construction Contractor or Reclamation	
	Fish-1d: Prepare and Implement a Spill Prevention and Hazardous Materials Management Plan Prior to the initiation of Construction Activities	Prior to the start of construction	Throughout Project construction			Construction Contractor or Reclamation	
Fish-1e: Aquatic Habitat Modification	**Fish-1e**: Implement Habitat Restoration Actions		Throughout Project construction			DWR and Reclamation	
Fish-1f: Hydrostatic Pressure Waves, Noise & Vibration	**Fish-1f**: Perform In-Water Pile Driving July Through September During Daylight Hours		Throughout Project construction			Construction Contractor	
Fish-1g: Predation Risk	**Fish-1g**: Design Fish Screen in Compliance with NMFS and CDFG Criteria	Prior to start of construction				DWR and Reclamation	
Fish-1h: Stranding, Impingement and Entrainment	**Fish-1h**: Prepare and Implement a Fish Salvage and Rescue Plan	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
Botanical Resources							
Impact Bot-1: A Substantial Adverse Effect, Including Conversion to Non-Native Vegetation, on any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, Regulations, or by DFG or USFWS, or any Native Plant Community Known to be Rare, Unusual, or Becoming Uncommon in the Biogeographic Region of the Project							
Bot-1a: Loss of Vegetation Community	**Bot-1a**: Implement Vegetation Community Mitigation Measures Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
Bot-1b: Annual Grassland (of Higher Botanical Value)	**Bot-1a:** Implement Vegetation Community Mitigation Measures Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
	Bot-1b: Conduct Watershed Hydrological Studies	Prior to start of construction				DWR and Reclamation	
Bot-1c: Blue Oak Woodland (Includes Savanna and Woodland with Chaparral Understory)	**Bot-1a:** Implement Vegetation Community Mitigation Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
	Bot-1c: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
Bot-1d: Riparian Vegetation	**Bot-1a:** Implement Vegetation Community Mitigation Measures Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
	Mitigation Measure Bot-1c: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
Bot-1e: Valley Oak Woodland	**Bot-1a:** Implement Vegetation Community Mitigation Measures Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
Bot-1f: Alkaline Wetland	**Bot-1a:** Implement Vegetation Community Mitigation Measures Recommended by USFWS	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
	Bot-1d: Conduct Groundwater Hydrological Studies	Prior to start of construction			During first five to ten years of Project operation	DWR and Reclamation	DWR and Reclamation
	Bot-1e: Minimize Impacts by Siting Facilities Away from Drainage Swales and Implementing BMPs	Prior to start of construction	Throughout Project construction			DWR and Reclamation	

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Bot-1g: Freshwater Emergent Marsh	**Bot-1f:** Implement BMPs to Avoid Disturbance of Marsh Vegetation in Adjacent Delevan National Wildlife Refuge		Throughout Project construction			Construction contractor or Reclamation	
Impact Bot-2: A Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on any Species Identified as a Candidate, Sensitive, or Special-Status Species in Local or Regional Plans, Policies, or Regulations, or by DFG or USFWS							
Bot-2a Fed/1B-A: Special- Status Plant Species: CNPS List 1B and State- or Federally Listed Species	**Bot-2a:** Conduct Pre-Construction Surveys for *Sidalcea keckii* and *Amsinckia lunaris*; if Found, Compensate According to USFWS Guidelines	Prior to start of construction				DWR and Reclamation	
	Bot-2b: Avoid occurrences of CNPS List 1B and State- or Federally-Listed Plant Species		Throughout Project construction			Construction contractor or Reclamation	
	Bot-2c: Conduct Pre-Construction Surveys for Rare Alkaline Wetland Species in the Managed Alkaline Wetland Parcel of the Delevan Pipeline	Prior to start of construction				DWR and Reclamation	
	Bot-2d: Conduct Pre-Construction Surveys for Special-Status Plant Species	Prior to start of construction				DWR and Reclamation	
	Bot-1c: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs		Throughout Project construction			Construction contractor or Reclamation	
Bot-2b List 4-A: Special- Status Plant Species: CNPS List 4 Species	**Bot-2e:** Compensate for Loss or Disturbance of CNPS List 4 Species According to CDFG Guidelines	Per CDFG Guidelines				DWR and Reclamation	
	Bot-1c: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs	Per CDFG Guidelines				DWR and Reclamation	
	Bot-2d: Conduct Pre-Construction Surveys for Special-Status Plant Species	Prior to start of construction				DWR and Reclamation	
Bot-2c:: Special- Status Plant Species	**Bot-1d:** Conduct Groundwater Hydrological Studies	Prior to start of construction			During first five to 10 years of Project operation	DWR and Reclamation	DWR and Reclamation
Bot-3: An Increase in the Potential for Invasion and Spread of Noxious Weeds	**Bot-3a:** Implement Preventive Actions by Following Weed Control BMPs; Minimize Exposed Ground; Reduce Weed Seed by Removal of On Site and Off-Site Weeds		Throughout Project construction			Construction contractor or Reclamation	
	Bot-3b: Implement Avoidance Measures in Areas Adjacent to the Delevan National Wildlife Refuge		Throughout Project construction			Construction contractor or Reclamation	
Bot-4: Indirect Impacts to Native Plants from Human Disturbance	**Bot-1c**: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs		Throughout Project construction			Construction contractor or Reclamation	
	Bot-4: Implement Vegetation Monitoring in Coordination with USFWS		Throughout Project construction		Throughout Project operation	Construction contractor or Reclamation	DWR and Reclamation
Terrestrial Biological Resources							
Wild-1a: Substantial Adverse Effect, Including Alteration of Habitat Suitability, on any Wildlife Habitat, Especially Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations, or by DFG or USFWS	**Wild-1a**: Implement a Combination of Habitat Protection, Enhancement, Restoration, or Conservation Easement Measures in Consultation with USFWS	Per USFWS consultation				DWR and Reclamation	
	Wild-1b: Implement Bat Exclusion Measures Prior to Demolition of Existing Structures	Prior to start of construction				DWR and Reclamation	

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		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Impact Wild-2: A Substantial Adverse Effect, Including Mortality, Either Directly or Through Habitat Modifications, on any Species Identified as a Candidate, Sensitive, or Special-Status Species in Local or Regional Plans, Policies, or Regulations, or by DFG or USFWS							
Wild-2a: Bald Eagle	**Wild-2a**: Obtain Permit for Bald Eagle Nest Tree Removal, Remove Nest Tree Outside of Breeding Season, and Create Suitable Habitat	Prior to start of construction activities				DWR and Reclamation	
Wild-2b: Bank Swallow	**Wild-2b**: Implement Protective Actions to Prevent Bank Swallows from Nesting in the Cut Banks of Project Construction Trenches		Throughout Project construction			DWR and Reclamation	
Wild-2c: Giant Garter Snake	**Wild-2c**: Conduct Pre-Construction Surveys for Giant Garter Snakes and Implement Protective Actions; Conduct Project Construction Activity Between May 1 and October 1 in Giant Garter Snake Habitat; Compensate for Temporary Disturbance of Habitat According to USFWS Guidelines	Prior to start of construction			Throughout Project construction	DWR and Reclamation	DWR and Reclamation
Wild-2d: Golden Eagle	**Wild-2d**: Implement Avoidance and Minimization Measures at Historic or Active Golden Eagle Nest Sites; Conduct Satellite Telemetry Studies Pre- and Post-Construction to Determine Territory Size; Prepare a Golden Eagle Protection Plan and a Golden Eagle Monitoring Plan; Mitigate for Loss of Annual Grassland Foraging Habitat	Beginning three to five years prior to start of construction			Throughout Project construction and during first five years of Project operation, if species are identified	DWR and Reclamation	DWR and Reclamation
Wild-2e: Ringtail	**Wild-2e**: Implement Protective Actions to Minimize Impacts to the Ringtail, and Restore Connectivity of Riparian Corridor		Throughout Project construction			DWR and Reclamation	
Wild 2f: Valley Elderberry Longhorn Beetle	**Wild-2f**: Implement Protective Actions to Avoid or Minimize Impacts to Elderberry Plants; Where Avoidance is not Possible, Transplant or Replace Plants, According to USFWS Guidelines	Prior to start of construction	Through Project construction			Construction contractor or Reclamation	
Wild-2g: Western Burrowing Owl	**Wild-2g:** Conduct Pre-Construction Surveys for Western Burrowing Owls; If Owls are Found, Implement Protective Actions	Prior to start of construction				DWR and Reclamation Biologist	
Wild-2h: Western Pond Turtle	**Wild-2h**: Conduct Pre-Construction Surveys and Provide a Biological Monitor During Project Construction for the Western Pond Turtle; If Found, Turtles shall be Captured and Relocated by a Qualified Biologist	Prior to start of construction activities	Throughout Project construction		Through project construction	DWR and Reclamation Biologist	DWR and Reclamation Biologist
Wild-2i: Western Yellow-Billed Cuckoo	**Wild-2i**: Conduct Pre-Construction Surveys for the Western Yellow-Billed Cuckoo and Schedule Construction Activities to Avoid Impacts to Nest Sites	Prior to start of construction			Throughout project construction, if species are observed	DWR and Reclamation Biologist	DWR and Reclamation Biologist

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Wild-3: Substantial Interference with Movement of Native Resident or Migratory Wildlife Species, or with Established Native Resident or Migratory Wildlife Corridors, or Impede Use of Native Wildlife Nursery Sites	**Wild-3a**: During Project Construction, Backfill Trenches within 72 hours of Pipeline Installation and Provide an Escape Ramp for Trapped Wildlife.		Throughout Project construction			Construction contractor or Reclamation	
	Wild-3b: Construct Transmission Lines and Associated Equipment Following Suggested Practices for Avian Protection on Power Lines.		Throughout Project construction			Construction contractor or Reclamation	
	Wild-3c: Restore Riparian Habitat Connectivity	After completion of Project construction			After completion of Project construction	DWR and Reclamation	DWR and Reclamation
Wild-4: Indirect Effects on Common Wildlife from Human Disturbance	**Wild-4**: Implement Avoidance and Minimization Measures	Prior to start of construction	Throughout Project construction and operation		Throughout project construction	DWR and Reclamation	DWR and Reclamation
Wetlands and Other Waters of the U.S.							
Impact Wet-1: A Permanent Change in the Use, Quality (Extent in Acres or Miles) of "Other Waters of the U.S.", (Including, but not Limited to, Lakes, Rivers, Streams Tributary to Navigable Rivers, Natural Ponds, Canals, or Ditches) that are Determined by the USACE to be Jurisdictional, through Direct Removal, Filling, Obstruction, Hydrological Interruption, or other Means							
Wet-1a: Streams	**Wet-1a**: Implement Compensatory Mitigation Measures for Streams pursuant to USACE Determination Within the Watershed in which the Impacts Occur	Per USACE consultation				Reclamation	
	SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
Wet-1b: Canals	**Wet-1b**: Reroute Canals to Ensure Continued Hydrological Connection, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination	Prior to start of construction				Reclamation	
Wet-1c: Ponds	**Wet-1c**: Restore Ponds to Original Condition, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination Within the Same Hydrologic Unit in which the Ponds Occur	After completion of Project construction				Reclamation	
Impact Wet-2: A Permanent Adverse Effect to Federally Protected Wetlands (as Defined by Section 404 of the Clean Water Act [Including, but not Limited to, Marsh, Vernal Pool, Coastal]) through Direct Removal, Filling, Hydrological Interruption, Discharge of Pollutants, or Other Means							
Wet-2a: Seasonal Wetlands	**Wet-2a**: Conserve, Enhance, Restore, or Create Seasonal Wetlands, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination within the Watershed in which the Impacts Occur	Per USACE determination				Reclamation	
Wet-2b: Alkaline Wetlands	**Wet-2b**: Conserve, Enhance, Restore, or Create Alkaline Wetlands, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination within the Watershed in which the Impacts Occur	Per USACE determination				Reclamation	
	SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation

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Wet-2c: Vernal Pools	**Wet-2c**: Conserve, Enhance, Restore, or Create Vernal Pools Equivalent to the Type of Vernal Pools Adversely Impacted, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination	Per USACE determination				Reclamation	
	SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
Wet-2d: Emergent Wetlands	**Wet-2d**: Conserve, Enhance, Restore, or Create Emergent Wetlands, or Implement Other Compensatory Mitigation Measures per USACE Determination within the Watershed in which the Impacts Occur.	Per USACE determination				Reclamation	
	SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
Wet-2e: Riparian Wetlands	**Wet-2e**: Conserve, Enhance, Restore, or Create Comparable Riparian Wetlands in the Inner Coast Range Foothills, or Implement Other Compensatory Mitigation Measures pursuant to USACE Determination	Per USACE determination				Reclamation	
	SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs		Throughout Project construction		Throughout Project construction	Construction contractor	DWR or Reclamation
Geology, Minerals, Soils, and Paleontology							
Geology & Soils							
Geo/Soils-2: Project Construction, Operation, and Maintenance Effects on Soil Erosion and Loss of Topsoil	**Geo/Soils-2**: Implement a Project Erosion and Sediment Control Plan, and Stormwater Pollution Prevention Plan, during Project Construction, Operation, & Maintenance		Throughout Project construction, operation, and maintenance			DWR and Reclamation	
Geo/Soils-3: Risks to Life and Property from Project Construction, Operation, and Maintenance on Expansive Soil	**Geo/Soils-3**: Perform a Geotechnical Investigation Due to Expansive Soils at Project Facility Sites	Prior to start of construction				DWR and Reclamation	
Geo/Soils-4: Project Construction, Operation, and Maintenance Effects on Soils that are Incapable of Adequately Supporting the use of Septic Tanks or Alternative Wastewater Disposal Systems where Sewers are not Available for Wastewater Disposal	**Geo/Soils-4**: Implement Avoidance Measures for Soils that are Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems where Sewers are not Available for the Wastewater Disposal	During Project design phase				DWR and Reclamation	

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Paleontology							
Paleo-1: Project Construction, Operation, and Maintenance Effects on Paleontological Resources	**Paleo-1a**: Retain a Qualified Paleontological Resource Specialist Prior to the Start of Construction	At least 90 days prior to start of construction				DWR and Reclamation	
	Paleo-1b: Consultation with the Paleontological Resource Specialist Prior to and During Project Construction	Prior to start of construction	Throughout Project construction			DWR and Construction	
	Paleo-1c: Prepare and Implement a Paleontological Resources Monitoring and Mitigation Plan	Prior to start of construction	Throughout Project construction		Throughout Project construction	DWR and Reclamation	DWR and Reclamation
	Paleo-1d: Conduct Paleontological Resources Awareness Training	Prior to start of construction	Throughout Project construction			DWR and Reclamation	
	Paleo-1e: Conduct Monitoring During Project Construction and Prepare Monthly Reports				Throughout Project construction		DWR and Reclamation
	Paleo-1f: Ensure Implementation of the Paleontological Resources Monitoring and Mitigation Plan		Throughout Project construction			DWR and Reclamation	
Faults and Seismicity							
Seis-1: Exposure of People or Structures to Fault Rupture, Seismic Ground Shaking, Seismic-Related Ground Failure, Liquefaction, or Landslides	**Seis-1**: Implement Slope Stabilization Methods; Design Facilities to Withstand Fault Rupture, Seismic Ground Shaking, Ground Failure, and Liquefaction	During Project design phase	Throughout Project construction			Construction contractor and DWR/Reclamation	
Cultural Resources							
Cul-1: A Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to §15064.5	**Cul-1a**: Avoid Impacts to Historical Resources/Historic Properties		During Project construction and operation			DWR and Reclamation	
	Cul-1b: Conduct Archaeological Data Recovery	Prior to start of construction				DWR and Reclamation	
	Cul-1c: Immediately Halt Construction if Cultural Resources are Discovered and Implement an Accidental Discovery Plan		Throughout Project construction			Construction contractor and Reclamation	
	Cul-1d: Protection of Archaeological Sites by Capping		Throughout Project construction		Throughout Project construction	DWR and Reclamation	DWR and Reclamation
	Cul-1e: Develop Agreement Documents to Address Potential Future Operational Impacts to Cultural Resources		Prior to Start of Operation			DWR and Reclamation	
Cul-2: A Substantial Adverse Change in the Significance of a Historical Resource of the Built Environment as Defined in §15064.5	**Cul-1a**: Avoid Impacts to Historical Resources/Historic Properties		Throughout Project construction and operation			DWR and Reclamation	
	Cul-2a: Follow the Secretary of the Interior's Standards for the Treatment of Historical Resources/Historic Properties		Throughout project construction			DWR and Reclamation Archaeologist	
	Cul-2b: Record Built Environment Resources to Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) Standards	Prior to start of construction				DWR and Reclamation	

Table 1
North-of- the-Delta Offstream Storage (NODOS) Project Mitigation Measure Monitoring Summary

Impact	Mitigation Measure	Mitigation Implementation Duration		Monitoring Duration		Responsibility	
		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Cul-3: Disturb a Traditional Cultural Property	**Cul-1a**: Avoid Impacts to Historical Resources/Historic Properties		Throughout Project construction and operation			DWR and Reclamation	
	Cul-1e: Develop Agreement Documents to Address Potential Future Operational Impacts to Cultural Resources		Prior to Start of Operation			DWR and Reclamation	
	Cul-3: Consult with Native American Communities regarding How to Mitigate for Impacts to TCPs	Prior to start of construction				DWR and Reclamation	
Cul-4: Disturb Human Remains, including those Interred Outside of Formal Cemeteries	**Cul-1a**: Avoid Impacts to Historical Resources/Historic Properties		Throughout Project construction and operation			DWR and Reclamation	
	Cul-1e: Develop Agreement Documents to Address Potential Future Operational Impacts to Cultural Resources		Prior to Start of Operation			DWR and Reclamation	
	Cul-4a: Relocation of Known Cemeteries	Prior to start of construction				DWR and Reclamation	
	Cul-4b: Immediately Halt Construction if Human Remains are Discovered and Implement a Burial Treatment Plan		Throughout Project construction			Construction contractor and Reclamation	
Land Use							
Land-2: Conflict with an Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	**Land-2a**: To the Extent Possible, Work with Glenn County to Encourage the County to Modify or Amend the Glenn County General Plan to Bring it into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
	Land-2b: Execute an Agreement with NRCS to Amend WRP Easement Contract and Conduct Post-Construction Wetland Restoration	Prior to start of construction				DWR and Reclamation	
Land-3: Changes in Land Use as a Result of Implementing the Alternatives that are Considered to be Incompatible with the Existing and General Plan Designated Land Uses at and Adjacent to Proposed Project Facilities	**Land-3a**: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Land Use Designations to Bring them into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
	Land-3b: Execute an Agreement with Maxwell Irrigation District to Minimize and Avoid Short-Term and Long-Term Impacts to Existing Facilities and Operations	Prior to start of construction				DWR and Reclamation	
	Cul-4a: Relocation of Known Cemeteries	Prior to start of construction				DWR and Reclamation	
Permanent Conversion of Prime Farmland, as Shown on the Maps Prepared Pursuant to the FMMP of the California Natural Resources Agency, Department of Conservation, to Non-Agricultural Use	**Land-4a**: Enter into Agricultural Conservation Easements with Glenn and Colusa Counties	Prior to start of construction				DWR and Reclamation	

Table 1
North-of- the-Delta Offstream Storage (NODOS) Project Mitigation Measure Monitoring Summary

Impact	Mitigation Measure	Mitigation Implementation Duration		Monitoring Duration		Responsibility	
		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Land-5: Permanent Conflict with Existing Zoning for Agricultural Use, and/or the Permanent Conversion of Lands that have a Williamson Act Contract	**Land-5a**: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Zoning Designations to Bring them into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
	Land-5b: Acquire Lands Through Eminent Domain	Prior to start of construction				DWR and Reclamation	
	Land-5c: For Land Permanently Acquired other than by Eminent Domain, Seek County Approvals to Rescind Williamson Act Contracts and Enter into Open Space Contracts or Open Space Easements	Prior to start of construction				DWR and Reclamation	
Land-6: Permanent Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production	**Land-5a**: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Zoning Designations to Bring them into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
Land-7: The Permanent Loss of Forest Land or Permanent Conversion of Forest Land to Non-Forest Use	**Land-3a**: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Land Use Designations to Bring them into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
Land-8: Other Changes in the Environment which, due to their Location or Nature, could Result in the Permanent Conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Local Potential Farmland to Non-Agricultural Use or Permanent Conversion of Forest Land to Non-Forest Use	**Land-4a**: Enter into Agricultural Conservation Easements with Glenn and Colusa Counties	Prior to start of construction				DWR and Reclamation	
	Land-3a: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Land Use Designations to Bring them into Consistency with the Proposed Project Land Uses	Prior to start of construction				DWR and Reclamation	
Recreation Resources							
Rec-4: Reduce Recreation Use Levels and/or Recreation Benefits at Existing Reservoirs or Rivers due to Changes in Operating Criteria	**Rec-4a**: Extend the Existing Dinosaur Point Boat Ramp at San Luis Reservoir	After start of construction, when San Luis Reservoir reaches a water level below 378 feet				DWR and Reclamation	
	Rec-4b: Extend the Basalt Campground Water Intake at San Luis Reservoir	After start of construction, when San Luis Reservoir reaches a water level below 345 feet				DWR and Reclamation	

Table 1
North-of- the-Delta Offstream Storage (NODOS) Project Mitigation Measure Monitoring Summary

Impact	Mitigation Measure	Mitigation Implementation Duration		Monitoring Duration		Responsibility	
		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Air Quality							
Air Qual-1: Conflict with an Applicable Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a Cumulatively Considerable Net Increase of Nonattainment Pollutants	**Air Qual-1a**: Develop a Fugitive Dust Control Plan	Prior to start of construction activities				DWR and Reclamation	
	Air Qual-1b: Implement Measures to Reduce Equipment and Vehicle Exhaust Emissions		Throughout Project construction, operation, and maintenance			Construction contractor, DWR and Reclamation	
Navigation, Transportation, and Traffic							
Trans-1: Conflict with an Applicable Plan, Ordinance, or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System, Considering all Modes of Transportation	**Trans-1**: Prepare and Implement a Project Operation Traffic Control Plan	Prior to start of construction	Throughout Project operation			DWR and Reclamation	
Trans-3: Substantially Increase Hazards Due to Design Feature or Incompatible Uses	**Trans-3**: Prepare and Implement a Project Construction Traffic Control Plan	Prior to start of construction	Throughout Project construction			Construction contractor, DWR and Reclamation	
Noise							
Noise-1: Expose Persons to or Generation of Noise Levels in Excess of Established Standards	**Noise-1a**: DWR and Reclamation Shall Include in the Construction and Maintenance Contracts Specifications to Reduce Noise Levels	Prior to start of construction and maintenance				DWR and Reclamation	
	Noise-1b: Design Facilities to Incorporate Noise Mitigation	During Project design phase				DWR and Reclamation	
Noise-2: Expose Persons to or Generation of Excessive Groundborne Vibration or Groundborne Noise Levels	**Noise-2**: Develop and Implement a Vibration Monitoring Plan	Prior to the start of construction	Throughout Project construction			Construction contractor, DWR and Reclamation	
Noise-3: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity Above Levels Existing without the Project	**Noise-1a**: DWR and Reclamation Shall Include in the Construction and Maintenance Contracts Specifications to Reduce Noise Levels	Prior to start of maintenance				DWR and Reclamation	
	Noise-1b: Design Facilities to Incorporate Noise Mitigation	During Project design phase				DWR and Reclamation	
Noise-4: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity Above Levels Existing without the Project	**Noise-1a**: DWR and Reclamation Shall Include in the Construction and Maintenance Contracts Specifications to Reduce Noise Levels	Prior to start of construction and maintenance				DWR and Reclamation	
Public Health and Environmental Hazards							
Hazardous Materials and Wildland Fires							
Pub Health-1: Create a Significant Public or Environmental Hazard from the Routine Transport, Use, or Disposal of Hazardous Materials	**SW Qual-1e**: Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of construction	Throughout Project construction, operation, and maintenance			Construction contractor, DWR and Reclamation	
Pub Health-2: Create a Significant Public or Environmental Hazard from the Release of Hazardous Materials into the Environment	**SW Qual-1e**: Prepare and Implement a Stormwater Pollution Prevention Plan	Prior to start of construction	Throughout Project construction, operation, and maintenance			Construction contractor, DWR and Reclamation	

Table 1
North-of- the-Delta Offstream Storage (NODOS) Project Mitigation Measure Monitoring Summary

Impact	Mitigation Measure	Mitigation Implementation Duration		Monitoring Duration		Responsibility	
		One-time	Ongoing	One-time	Ongoing	Mitigation Implementation	Mitigation Monitoring
Pub Health-4: Create a Significant Hazard to the Public or the Environment from the Project being Located on a Listed Hazardous Materials Site	**GW Qual-1b**: Implement DWR and County Standards for the Proper Abandonment of Wells, Boreholes, and Septic Systems	Prior to start of construction	Throughout Project construction			Construction contractor, DWR and Reclamation	
	Pub Health-4: Dispose of Hazardous Waste Discovered during Project Construction Pursuant to CERCLA Requirements		Throughout Project construction			Construction contractor, DWR, and Reclamation	
Pub Health-5: Effects on Adopted Emergency Response Plan or Emergency Evacuation Plan Implementation	**Trans-1**: Prepare and Implement a Project Operation Traffic Control Plan	Prior to start of construction	Throughout Project operation and maintenance			Construction contractor, DWR, and Reclamation	
	Trans-3: Prepare and Implement a Project Construction Traffic Control Plan	Prior to start of construction	Throughout Project construction			Construction contractor, DWR, and Reclamation	
Pub Health-6: Expose People or Structures to a Significant Risk of Loss, Injury, or Death from Wildland Fires	**Pub Health-6**: Develop and Implement a Project Fire Prevention and Suppression Plan and Consult with Fire Protection Agencies	Prior to start of construction	Throughout Project construction, operation, and maintenance			Construction contractor, DWR, and Reclamation	
Pub Health-9: Expose People to an Increased Risk of Mosquito-Borne or Other Vector-Borne Illnesses, or Increased Exposure to Nuisance Problems	**Pub Health 9a**: Develop and Implement a Stormwater Pollution Prevention Plan	Prior to start of construction	Throughout Project construction			Construction contractor, DWR, and Reclamation	
	Pub Health-9b: Develop and Implement a Mosquito and other Vector Control Plan	Prior to start of construction	Throughout Project construction, operation, and maintenance			DWR and Reclamation	
Public Services and Utilities							
Services- 1: A Substantial Adverse Physical Impact Associated with the Provision of New or Physically Altered Governmental Facilities or the Need for New or Physically Altered Governmental Facilities (the Construction of which could cause Significant Environmental Impacts) in order to Maintain Acceptable Service Ratios, Response Times, or Other Performance Objectives for the Following Public Services: Fire Protection, Police Protection, Schools, Parks, and/or Other Public Facilities, and Disruptions to Local or Regional Utility Services							
Services-1a: Damage to or Disruption of Existing Utility Services	**Services-1a**: Avoid Damage to or Disruption of Existing Utility Services		Throughout Project construction			DWR and Reclamation	
Services 1b: Project Facility Siting Impacts to Utilities	**Services-1a**: Avoid Damage to or Disruption of Existing Utility Services		Throughout project construction			Construction contractor, DWR, and Reclamation	
	Services-1b: Perform Utility Relocation or Modification	Prior to start of Project construction					
Services-1c: Project Facility Conflicts with Currently Unidentified Utility Systems	**Services-1a**: Avoid Damage to or Disruption of Existing Utility Services		Throughout project construction			Construction contractor, DWR and Reclamation	
Visual Resources							
Vis-3: Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings	**Vis-3a**: Reduce Construction and Maintenance Impacts Causing Adverse Temporary Impacts on Visual Quality of the Site	Restoration following completion of construction	Throughout Project construction and maintenance			Construction contractor, DWR and Reclamation	
	Vis-3b: Reduce Operational Impacts Causing Adverse Permanent Impacts on Visual Quality of the Site	During Project design phase	Throughout Project construction and operation			Construction contractor, DWR and Reclamation	
Vis-4: Introduce a New Source of Substantial Light or Glare which Would Adversely Affect Day or Nighttime Views in the Area	**Vis-4a**: Reduce Construction and Maintenance Impacts Causing Substantial Light or Glare	During project design phase	Throughout Project construction and maintenance			Construction contractor, DWR and Reclamation	
	Vis-4b: Reduce Operational Impacts Causing Substantial Light or Glare	During Project design phase	Throughout Project construction and operation			DWR and Reclamation	

Appendix
Mitigation Monitoring Plan Measure Descriptions

APPENDIX:
Mitigation Monitoring Plan Measure Descriptions

Surface Water Quality

Mitigation Measure SW Qual-1a: Implement a Water Quality Monitoring, Modeling, and Operations Coordination Program to Protect Beneficial Uses

A comprehensive water monitoring program, including analysis of water quality conditions at the Project intake/discharge locations on the Sacramento River, as well as major Project conveyance and impoundment features, shall be implemented. This monitoring program shall include a network of automated real-time water monitoring locations at these locations, with data available to operators on the SCADA control system to allow real-time adaptive alteration in diversion amounts based on these conditions. This would allow operators to select the best quality waters to fill Sites Reservoir and potentially avoid importation of poor quality water that may affect the quality of Project water deliveries. This strategy could require additional modeling of Project water quality conditions to better understand the complex chemical interactions and physical and biological processes that affect contaminant levels. In addition, fish in Sites Reservoir shall be sampled and analyzed for mercury and other potential contaminants that may have deleterious effects to human and wildlife consumers. Results from these analyses shall be submitted to the Office of Environmental Health Hazard Assessment (OEHHA) for determination of the threats to consumers of fish in Sites Reservoir. Determination of adverse health effects to consumers would lead to educational postings at access points and public media to reduce exposure to contaminated fish.

Mitigation Measure SW Qual-1b: Excavate and Remove or Consolidate and Cap Salt Lake

The Salt Lake site within the footprint of Sites Reservoir for Alternatives A, B, and C would be either excavated and removed or consolidated and capped by an impermeable cover to avoid dissolution of the salt deposit into the reservoir waters. Salt Lake is fed by upslope salt springs, is many decades old, and the salt pan has accumulated to an unknown thickness over this time by evaporation. After removal/capping of the salt pan, the salt spring inputs to a completed Sites Reservoir would be diluted by high quality Sacramento River imports to a level that would be less than significant to water quality.

Mitigation Measure SW Qual-1c (1): Implement Soil Stabilization and Sediment Control BMPs

During construction activities, onsite monitoring shall be performed to identify runoff impacts. Appropriate soil stabilization BMPs; such as hydroseeding and application of other soil binders; installation of culverts, pipelines, and lined ditches to divert stormwater around disturbed soil areas; dust suppression through application of water to unpaved access roads; and placing cover material over material stockpiles; shall be implemented to reduce potentially significant construction impacts from erosion to a less-than-significant level. Sediment control BMPs, such as installation of fiber rolls and straw bales, settling/desilting basins, and other control measures, shall be implemented to reduce potentially significant construction impacts to surface water quality (suspended sediment and turbidity) and drainage to a less-than-significant level. Details of these BMPs are described in Section WM-3 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1c (2): Prepare and Implement a Stormwater Pollution Prevention Plan

The Project is subject to construction-related stormwater permit requirements of the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Permit Program. DWR and Reclamation shall obtain any required permits through the CVRWQCB before any ground-disturbing construction activities occur. DWR and Reclamation shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that identifies BMPs to prevent or minimize the introduction of contaminants into surface waters. BMPs for the Project could include, but are not limited to, silt fencing, straw bale barriers, diversion ditches, fiber rolls, storm drain inlet protection, hydraulic mulch, and stabilized construction entrance. The SWPPP shall include development of site-specific structural and operational BMPs to prevent and control impacts on runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means.

Mitigation Measure SW Qual-1e: Prepare and Implement a Stormwater Pollution Prevention Plan

DWR and Reclamation shall prepare and implement a SWPPP that emphasizes proper hazardous materials storage and handling procedures; shall outline spill containment, cleanup, and reporting procedures; and shall limit refueling and other hazardous activities to designated upland areas. Signs prohibiting refueling shall be posted in sensitive areas. Equipment shall be inspected prior to use each day to ensure that hydraulic hoses are tight and in good condition. Other appropriate BMPs, such as use of concrete washout basins and proper waste management, combined with visual observation and water sample collection and analysis, shall be used to prevent discharge of drilling mud and other chemicals associated with construction activities and into receiving waters. Details of these BMPs are described in Section WM-4 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1f: Implement BMPs including Diversion Ditches, Berms, Pipelines, Sheet Piles, and Cofferdams

Clear water diversion consists of a system of structures and measures that intercept clear surface water runoff upstream from a Project site, transport it around the work area, and discharge it downstream from the work area with minimal water quality degradation. Clear water diversions shall be used during construction at all Primary Study Area Project Facilities except the GCID Canal Facilities Modifications, and shall be included in the SWPPP. Structures used as part of this system shall include some or all of the following: diversion ditches, berms, dikes, slope drains, pipelines, rock, gravel bags, wood, sheet piles, aqua barriers, cofferdams, filter fabric or turbidity curtains, drainage and interceptor swales, pipes, or flumes. Details of these BMPs are described in Section NS-5 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1g: Implement Caltrans Field Guide to Construction Site Dewatering

Effluent from dewatering activities shall be properly stored and disposed of to prevent contamination of surface water. This measure is intended to prevent the discharge of pollutants from construction site dewatering operations associated with stormwater (accumulated rain) and non-stormwater (e.g., groundwater or water from a diversion or cofferdam). Dewatering effluent that is discharged from a construction site to a storm drain or receiving water is subject to the requirements of the applicable NPDES Permit. Detailed guidance for management of dewatering operations is included in the *Caltrans Field Guide to Construction Site Dewatering* (Caltrans, 2001). The dewatering effluent shall be managed according to Central Valley RWQCB requirements and California Stormwater Quality Association BMPs.

Mitigation Measure SW Qual-1h: Implement Concrete Waste Management BMPs

Concrete waste management procedures and practices shall be implemented during construction of all Project facilities except the GCID Canal Facilities Modifications, where the following conditions exist: where concrete is used as a construction material or where concrete dust and debris would result from demolition activities; where slurries containing Portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition; and where concrete trucks and other concrete-coated equipment are washed on-site. Concrete waste management procedures and practices shall include some or all of the following: placing temporary berms or sandbags to contain concrete slurry wastes; constructing temporary concrete washout facilities, consisting of pits or berms with sufficient volume to contain all concrete waste from concrete truck washout procedures; regular inspection and maintenance of these BMPs; and proper disposal of hardened concrete wastes and backfill of removed concrete waste facilities after construction activities are complete. Details of these BMPs are described in Section WM-8 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1i: Implement Vehicle and Equipment Cleaning Procedures and Practices

Vehicle and equipment cleaning procedures and practices shall be used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain systems or to watercourses. On-site vehicle and equipment washing shall be discouraged. The use of solvents shall be minimized and the use of diesel for vehicle and equipment cleaning shall be prohibited. Details of these BMPs are described in Section NS-8 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1j: Implement Vehicle and Equipment Fueling Procedures and Practices

Vehicle and equipment fueling procedures and practices, including off-site fueling of all vehicles and equipment that regularly enter and leave a worksite, on-site designated fueling areas appropriately designed to prevent spilled fuel from entering storm drains or receiving waters, access to absorbent spill clean-up materials and proper disposal of used material, drip pans if equipment is fueled in an area other than designated fueling areas, and fuel nozzles equipped with automatic shut-off to control drips, shall be implemented to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses at all Project facility sites. Fueling BMPs and spill response procedures shall also be described in the SWPPP. Details of these BMPs are described in Section NS-9 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1k: Implement Vehicle and Equipment Maintenance Procedures and Practices

Vehicle and equipment maintenance procedures and practices shall be performed to minimize or eliminate the discharge of pollutants from vehicle and equipment maintenance operations to storm drain system or to watercourses. Details of these BMPs are described in Section NS-10 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure SW Qual-1l: Implement Appropriate Pile Driving Procedures and Practices

The construction and retrofit of bridges and retaining walls often include driving piles for foundation support and shoring operations. Driven piles are typically constructed of concrete, steel, or timber. Driven sheet piles are used for shoring and cofferdam construction. Proper control and use of equipment, materials, and waste products from pile driving operations shall be implemented to reduce the discharge

of potential pollutants to the storm drain system or watercourses. Details of these BMPs are described in Section NS-11 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Flood Control and Management

Mitigation Measure Flood-1: Maintain Permanent Low Flow Releases into Stone Corral and Funks Creeks Downstream of Sites and Golden Gate Dams

To mitigate for **Impact Flood-1** and pursuant to DFG Code 5937 related to maintaining flows downstream of dams, post-construction fish flows into Funks and Stone Corral creeks shall be maintained by DWR and Reclamation by means of low-flow release valves at Golden Gate and Sites dams. Flows shall be maintained at 10 cfs from October through May in both creeks to mimic the seasonal nature of the creeks while avoiding historic flooding.

Groundwater Resources

Mitigation Measure GW Res-2: Monitor and Lower Groundwater Levels as Necessary

To minimize impacts to existing land uses from the expected increase in groundwater levels from the development of the Holthouse Reservoir Complex, the TRR, and the Delevan Pipeline Intake Facilities, groundwater level monitoring wells shall be installed around these facilities prior to filling of the reservoirs and forebay to provide existing groundwater level data for these areas. The wells shall be monitored throughout Project operation to determine changes in groundwater levels. Shallow groundwater return wells or French Drains with pumps shall be installed to pump groundwater and return it to the reservoirs and forebay if it is determined necessary to lower the groundwater levels.

Mitigation Measure Bot-1d: Conduct Groundwater Hydrological Studies

DWR and Reclamation shall conduct hydrological studies to determine the effects of groundwater pressure on the alkaline habitat quality of the swale and the marsh. Measures may include protection of nearby similar vegetation communities, or USFWS may determine the effects are unavoidable and there may be no means of mitigation if there are no equivalent nearby vegetation communities that are feasible to protect or enhance.

Groundwater Quality

Mitigation Measure SW Qual-1e: Prepare and Implement a Stormwater Pollution Prevention Plan

DWR and Reclamation shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that emphasizes proper hazardous materials storage and handling procedures; shall outline spill containment, cleanup, and reporting procedures; and shall limit refueling and other hazardous activities to designated areas. Signs prohibiting refueling shall be posted in sensitive areas. Equipment shall be inspected prior to use each day to ensure that hydraulic hoses are tight and in good condition. Other appropriate BMPs, such as use of concrete washout basins and proper waste management, securely locating and maintaining portable toilets, combined with visual observation and water sample collection and analysis, shall be used to prevent discharge of possible contaminants and chemicals associated with construction, maintenance, or operations activities to reduce potentially significant contamination impacts to groundwater quality to a **less-than-significant level**. Details of these BMPs are described in Section WM-4 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure GW Qual-1b: Implement DWR and County Standards for the Proper Abandonment of Wells, Boreholes, and Septic Systems

According to DWR's Water Well Standards (DWR, 2012), a well that is no longer useful (including exploration and test holes) must be destroyed to assure that the existing groundwater quality and proposed Project water quality is protected and preserved for further use, and to eliminate any potential physical hazard. Destruction of a well shall consist of the complete filling of the well in accordance with the procedures described in DWR Water Well Standards Section 23. Permits for well destruction shall also be obtained from the appropriate County agency (Glenn or Colusa).

Any current or historic oil and gas wells detected within the Project facility footprints shall be addressed. Any well types that would be inundated shall be properly sealed and abandoned according to policies and procedures laid out in the California Code of Regulations Title 14 from the Department of Conservation. These wells shall be sealed to ensure that the existing groundwater quality is protected and preserved, and to eliminate any potential physical hazard. Permits for well destruction shall also be obtained from the appropriate County agency (Glenn or Colusa).

Any test holes, boreholes, other potential conduits to groundwater shall also be sealed and destroyed.

Existing septic systems, such as septic tanks, cesspools, and seepage pits, shall be identified and located. These septic systems shall then be properly abandoned and demolished, and, if necessary, removed and disposed of. Destruction of septic systems shall require:

- A licensed septic tank pumper to pump the septic tank. A copy of the receipt for this pumping shall be obtained.
- Abandonment of the tank in accordance with county ordinances, which may include methods such as:
  - Tank removed, then disposed of at a sanitary landfill
  - Tank top removed, tank crushed, then excavation filled with earthen materials to within 12 inches of native surface
  - Tank top removed, bottom perforated, then excavation filled with earthen materials to within 12 inches of native surface

Permits for abandonment and destruction shall also be obtained from the appropriate County (Glenn or Colusa) prior to work.

Mitigation Measure GW Qual-1c: Implement Caltrans Field Guide to Construction Site Dewatering

Effluent from dewatering activities shall be properly stored and disposed of to prevent contamination of surface water. This BMP is intended to prevent the discharge of pollutants from construction site dewatering operations associated with stormwater (accumulated rain) and non-stormwater (e.g., groundwater or water from a diversion or cofferdam). Dewatering effluent that is discharged from the construction site to a storm drain or receiving water is subject to the requirements of the applicable National Pollutant Discharge Elimination System (NPDES) permit. Refer to the *Caltrans Field Guide to Construction Site Dewatering* for detailed guidance for management of dewatering operations (Caltrans, 2001). The dewatering effluent shall be managed according to Central Valley RWQCB requirements and California Stormwater Quality Association BMPs.

Mitigation Measure GW Qual-1d: Identify Underground Utilities Prior to Start of Construction

Underground utilities in the vicinity of Project facility footprints, such as gas or sewer lines, must be identified and located prior to any excavation. This is to ensure excavation activities do not cause damage to the utilities, resulting in utility disruption and/or construction worker safety. Prior to the start of construction, utility providers shall be contacted to identify underground utilities in the vicinity of Project facility footprints.

Mitigation Measure GW Qual-1e: Construct Septic Systems, Leach Fields, and Vault Toilets in Accordance with County Permit Specifications

Septic systems, leach fields, and vault toilets shall be properly sited, designed, installed, operated, and maintained to ensure that wastewater is adequately treated and does not contaminate groundwater. Permits and approvals shall be obtained from Colusa County Environmental Health.

Aquatic Biological Resources

Mitigation Measure Fish-1a: Increase stocking frequency of coldwater fish species

[Text to be developed]

Mitigation Measure Fish-1b: Prepare and Implement a Mitigation Monitoring and Reporting Plan

DWR and Reclamation shall prepare and implement a Mitigation Monitoring and Reporting Plan to mitigate for expected significant reduced flows through the Yolo Bypass (all alternatives), which could include the following mitigation measure:

- Modifications to the Fremont Weir to allow additional flow for inundation of the Yolo Bypass has been identified as a fisheries habitat improvement action by other projects or programs and may be implemented before the NODOS Project is authorized. If modifications occur before implementation of the NODOS Project, this impact would be reduced to less than significant and would not require mitigation. If the modifications are not yet implemented, mitigation measures for the NODOS Project could include modification of the weir to offset potentially reduced flows through the Yolo Bypass and associated habitat availability for splittail and other fish species of primary management concern.

Mitigation Measure Fish-1c: Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion and Sediment Control Plan (ESCP) Prior to the Initiation of Construction Activities

DWR and Reclamation shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion and Sediment Control Plan (ESCP) prior to the initiation of construction activities. The SWPPP and/or ESCP shall incorporate Central Valley Regional Water Quality Control Board's dewatering requirements and the California Storm Water Quality Association's best management practices for dewatering, and shall establish site-specific erosion- and sediment-control measures for construction, operation, and maintenance activities, such as:

- Minimizing traffic speeds on access roads to 10 miles per hour or less.
- Maintaining a minimum of two feet of freeboard on all haul trucks.

- Periodically applying water to disturbed areas, to control dust exposure as needed, depending on weather conditions.
- Applying soil stabilizers in accordance with manufacturers' specifications to all inactive construction areas.
- Installing erosion control wattles around all disturbed areas and ditches.
- Installing silt fencing.
- Utilizing drainage inlet protection.
- Utilizing sediment settling basins through which all water removed from any waterways will be pumped into prior to being discharged into any waterways.
- Utilizing concrete washout areas.
- Hydroseeding and mulching disturbed areas.

Mitigation Measure Fish-1d: Prepare and Implement a Spill Prevention and Hazardous Materials Management Plan Prior to the Initiation of Construction Activities

DWR and Reclamation shall prepare a Spill Prevention and Hazardous Materials Management Plan (developed as part of the SWPPP) that would be designed to minimize the potential for chemical spills and seepage during construction, operation, and maintenance activities. Such a plan may include, but not be limited to, the following:

- On-site handling rules to keep construction and maintenance materials out of drainages and waterways;
- Prevention of any substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses, including ditches and canals;
- Cleaning up all spills immediately according to the spill prevention and control plan, and notifying CDFG and the Central Valley Regional Water Quality Control Board (CVRWQCB) immediately of spills and associated cleanup procedures;
- Providing staging and storage areas away from watercourses and their watersheds for equipment, materials, fuels, lubricants, solvents, and other possible contaminants
- Publishing protocols for regular maintenance of construction vehicles and equipment to minimize the potential for leakage or spills.

Mitigation Measure Fish-1e: Implement Habitat Restoration Actions

To minimize disturbance to aquatic habitat, construction personnel shall participate in an environmental awareness training program provided by a qualified biologist. Construction personnel shall be informed about any sensitive biological resources associated with the proposed Project and that disturbance of sensitive habitat or special-status species would be a violation of the Endangered Species Act and the Clean Water Act.

Mitigation specific to construction of the proposed Project facilities could include the following:

- **Construction of Sites Reservoir Inundation Area and Sites Dams**
  - Mitigation measures to offset inundation of Stone Corral and Funks creeks shall include habitat restoration of Stone Corral and Funks Creek at a ratio of 2:1 (i.e., two acres restored for every acre removed), such that twice as many linear stream miles would be restored along Stone Corral and Funks creeks as would be inundated by Sites Reservoir and displaced by Sites and Golden Gate dams. Habitat restoration actions may occur at other nearby creeks if feasible habitat restoration actions on Stone Corral and Funks creek are inadequate to meet mitigation requirements. Habitat restoration measures could include removal of non-native vegetation in the riparian area, planting of native riparian species, bank stabilization in areas with excessive erosion, and potentially active removal of non-native fish species. Monitoring of restoration actions shall be conducted for a minimum of five years to ensure that restored habitat is functioning as intended. Specific restoration actions and sites to be restored at each creek shall be included in the Mitigation Monitoring and Reporting Plan.
- **Construction of Holthouse Reservoir Complex, the Sites Reservoir Inlet/Outlet Structure, and the Sites Pumping/Generating Plant**
  - Mitigation measures shall include habitat restoration along Funks Creek at a ratio of 2:1, which shall be in addition to the number of stream miles restored associated with inundation of Funks Creek by Sites Reservoir. Habitat restoration actions may occur at other nearby creeks if feasible habitat restoration actions on Funks creek are inadequate to meet mitigation requirements. Monitoring of restoration actions shall be conducted for a minimum of five years to ensure that restored habitat is functioning as intended. Specific restoration actions and sites to be restored shall be included in the Mitigation Monitoring and Reporting Plan.
- **Construction of the Delevan Pipeline**
  - Construction activities associated with the Delevan Pipeline at Hunters Creek and the Colusa Basin Drain shall occur during the summer months when the water bodies generally are dry. If construction occurs during a particularly wet year when the water bodies do not cease flowing, construction shall occur in a manner that allows passage of native fishes past construction sites. Specifically, construction shall occur across only half of the water body at one time. Cofferdams shall be installed to isolate half of the total construction area, allowing the other half of the water body to remain flowing. After construction on one side of the water body is complete, the other half shall then be isolated and dewatered where construction shall continue.
  - Measures to mitigate for the temporary loss of habitat on Hunters Creek and the Colusa Basin Drain shall include on-site habitat restoration following the completion of construction. Habitat restoration measures could include planting of native riparian species and removal of non-native vegetation. Monitoring of restoration actions shall be conducted for a minimum of five years to ensure that restored habitat is functioning as intended.
- **Construction of the Delevan Pipeline Intake Facilities and Delevan Pipeline Discharge Facility**
  - As mitigation for loss of riparian and SRA habitat on the Sacramento River, degraded habitat shall be restored to provide riparian and/or SRA habitat at or near the areas affected by construction of the intake/discharge facilities at a ratio of 2:1. Proposed restoration activities shall include the removal of non-native vegetation as necessary and re-vegetation with native riparian species to provide shaded riverine aquatic (SRA) and/or riparian habitat. As a component of SRA habitat, riparian tree species such as alders, cottonwoods and willows, shall be planted. In

addition to habitat restoration actions, due to the importance of IWM to juvenile fishes in the Sacramento River, any IWM that is moved or altered by construction activities shall stay on-site and be returned to the river, or be replaced with a functional equivalent. Monitoring of restoration actions shall be conducted for a minimum of five years to ensure that restored habitat is functioning as intended. Specific restoration actions and sites to be restored on the Sacramento River shall be included in the Mitigation Monitoring and Reporting Plan.

Mitigation Measure Fish-1f: Perform In-Water Pile Driving July Through September During Daylight Hours

In-water pile driving shall only occur during July through September during daylight hours. This time period takes into consideration the migratory patterns of salmonids; pile driving shall occur after the cessation of the outmigration of juvenile salmon and before the initiation of the upstream migration of adults returning to spawn. To avoid impacts to the majority of fish species of primary management concern, sheet pile installation and in-stream heavy equipment activity shall be coordinated with USFWS, USBR, CDFG, and NMFS to avoid and or minimize potential impacts. If feasible, a vibratory hammer shall be used, and pile driving shall commence at low energy levels and slowly build to impact force. In addition, underwater sound levels shall be monitored to ensure that pile driving activities do not create underwater sound levels that exceed NMFS' noise thresholds (i.e., accumulated sound exposure level of 183 dB and a peak pressure of 206 dB).

Mitigation Measure Fish-1g: Design Fish Screen in Compliance with NMFS and CDFG Criteria

Fish screen at the Delevan Pipeline Intake Facilities shall be designed to comply with NMFS and CDFG fish screening criteria. The Delevan Pipeline Intake Facilities or Discharge Facility shall be designed to minimize hydraulic and physical habitat that is suitable for non-native predatory fish species. The facility shall be designed in coordination with NMFS and CDFG to ensure incorporation of the best available scientific and engineering knowledge of fish screen design to minimize predation potential on fish species of primary management concern. These design criteria shall minimize or avoid increased habitat suitability for non-native predatory fish species. However, a monitoring and adaptive management program shall be implemented to ensure that losses resulting from predatory fish are minimized.

Mitigation Measure Fish-1h: Prepare and Implement a Fish Salvage and Rescue Plan

The fish screen at the Delevan Pipeline Intake Facilities shall be designed to comply with NMFS and CDFG fish screening criteria. In addition, a Fish Salvage and Rescue Plan shall be developed and approved by NMFS and CDFG prior to initiation of construction activities, and could include the following measure:

- A qualified biologist shall provide construction monitoring throughout all phases of the project. If spawning activities for sensitive fish species are encountered during construction activities, the monitoring biologist shall be authorized to stop construction activities until appropriate corrective measures are completed or it is determined that the fish would not be harmed. If possible, all fish species shall be allowed to independently move away from the area. Fish that become entrapped in any side channel where construction work is taking place shall be netted, transported to the river, and released according to the Fish Salvage and Release Plan.

Botanical Resources

Mitigation Measure Bot-1a: Implement Vegetation Community Mitigation Measures Recommended by USFWS

For the three alternatives (Alternatives A, B, and C), the acreage of permanent vegetation loss within the Recreation Areas and the Road Relocations, as well as the temporary vegetation disturbance within the construction disturbance areas for most facilities, has been estimated. Because these acres were estimated, it may be possible to avoid impacts to certain areas or vegetation communities.

A Habitat Evaluation Procedures assessment of the Primary Study Area was conducted under USFWS' leadership. The results of that assessment, as well as consultation with USFWS pursuant to the Fish and Wildlife Coordination Act, shall aid in the determination of appropriate mitigation measures for the habitat types, and by extension, the corresponding vegetation types, that would be adversely affected within the Primary Study Area. Measures shall include mitigation for impacts to grassland that contains wetlands, is suitable habitat for special-status plant species, and/or contains native grass stands; impacts to blue oak woodlands, including savanna and woodlands with chaparral understory; impacts to riparian vegetation, including distinction between degraded/disturbed areas (e.g., Sites Reservoir) versus mature forest (e.g., Funks Creek at Holthouse Reservoir Complex and Delevan Pipeline Intake/Discharge Facilities); impacts to valley oak woodlands, taking into consideration the small and fragmented sites; and impacts to alkaline wetlands. Mitigation measures could include, but not be limited to, protection, enhancement, restoration, or conservation easement.

Mitigation Measure Bot-1b: Conduct Watershed Hydrological Studies

DWR and Reclamation shall conduct hydrological studies to determine how much of the grassy upland acts as a watershed for the alkaline wetland swale that feeds the downstream alkaline marsh. The studies shall provide guidance regarding how to avoid impacts to the grasslands that direct water to the marsh.

Mitigation Measure Bot-1c: Avoid/Minimize Loss or Disturbance of Vegetation by Refining the Siting of Facilities and Implementing BMPs

DWR and Reclamation shall implement BMPs, protective measures such as fencing and erosion, sedimentation, and dust control, and where possible refine the siting of facilities to minimize construction disturbance to sensitive vegetation communities.

Mitigation Measure Bot-1d: Conduct Groundwater Hydrological Studies

DWR and Reclamation shall conduct hydrological studies to determine the effects of groundwater pressure on the alkaline habitat quality of the swale and the marsh. Measures may include protection of nearby similar vegetation communities, or USFWS may determine the effects are unavoidable and there may be no means of mitigation if there are no equivalent nearby vegetation communities that are feasible to protect or enhance.

Mitigation Measure Bot-1e: Minimize Impacts by Siting Facilities Away from Drainage Swales and Implementing BMPs

DWR and Reclamation shall implement measures that mitigate impacts within the Holthouse Reservoir Complex to alkaline wetland vegetation in the on-site swale to avoid sedimentation of the swale during Project construction, according to recommendations received during consultation with USFWS.

Mitigation Measure Bot-1f: Implement BMPs to Avoid* D*isturbance of Marsh Vegetation in Adjacent Delevan National Wildlife Refuge

DWR and Reclamation shall set back all construction activities and equipment at least 20 feet away from the strip of marshy vegetation along the south end of the Delevan Pipeline construction disturbance area bordering the north edge of Delevan NWR. In addition, construction workers shall be prohibited from entering the NWR. BMPs, including signage on existing fencing, shall also be used to minimize erosion, sedimentation, and dust.

Mitigation Measure Bot-2a: Conduct Pre-Construction Surveys for* Sidalcea keckii *and* Amsinckia lunaris*; if Found, Compensate According to USFWS Guidelines

If either plant species is found during the Project pre-construction surveys, DWR and Reclamation shall immediately report the location and size of occurrences to CDFG and USFWS. If found, DWR and Reclamation shall compensate for the loss or temporary disturbance of either species according to USFWS guidelines, which could include protection of known occurrences in nearby habitat.

Mitigation Measure Bot-2b: Avoid Occurrences of CNPS List 1B and State- or Federally-Listed Plant Species

DWR and Reclamation shall avoid occurrences of Sidalcea keckii, Amsinckia lunaris, and Lotus rubriflorus by refining the siting of facilities where feasible, and minimizing construction impacts with protection measures and BMPs, such as fencing and erosion, dust, and sedimentation control. Mitigation Measure Bot-2c: Conduct Pre-Construction Surveys for Rare Alkaline Wetland Species in the Managed Alkaline Wetland Parcel of the Delevan Pipeline

DWR and Reclamation shall conduct pre-construction surveys to determine if rare alkaline wetland species are present. If determined to be present during the pre-construction survey, DWR and Reclamation shall compensate for the loss and temporary disturbance of alkaline wetland species according to USFWS guidelines, which could include protection of known occurrences in nearby habitat.

Mitigation Measure Bot-2c: Conduct Pre-Construction Surveys for Rare Alkaline Wetland Species in the Managed Alkaline Wetland Parcel of the Delevan Pipeline

DWR and Reclamation shall conduct pre-construction surveys to determine if rare alkaline wetland species are present. If determined to be present during the pre-construction surveys, DWR and Reclamation shall compensate for the loss and temporary disturbance of alkaline wetland species according to USFWS guidelines, which could include protection of known occurrences in nearby habitat.

Mitigation Measure Bot-2d: Conduct Pre-Construction Surveys for Special-Status Plant Species

DWR and Reclamation shall conduct pre-construction surveys to determine if habitats that support special-status species are present.

Mitigation Measure Bot-2e: Compensate for Loss or Disturbance of CNPS List 4 Species According to CDFG Guidelines

DWR and Reclamation shall compensate for the loss of 13 occurrences CNPS List 4 species pursuant to consultation with DFG, which could include protection of known occurrences in nearby habitat. DWR and Reclamation shall also compensate for the temporary disturbance of four CNPS List 4 species pursuant to consultation with DFG, which could include preserving habitat available for recolonization by

three of the four species by revegetating with local natives and using weed-free mulch to prevent post-construction takeover by weeds.

Mitigation Measure Bot-3a: Implement Preventive Actions by Following Weed Control BMPs; Minimize Exposed Ground; Reduce Weed Seed by Removal of On-Site and Off-Site Weeds

DWR and Reclamation shall minimize the introduction of new weed seeds into the construction disturbance area or transport weed seeds between construction disturbance areas by following weed control BMPs (e.g., equipment washing). DWR and Reclamation shall minimize the exposed ground within the construction disturbance area that is available for weed colonization or spread by mulching with weed-free materials or planting the exposed ground with native cover crops local to the Project area. In addition, DWR and Reclamation shall reduce the weed seed that is available for invasion into the Project construction disturbance area by appropriate removal of on-site weeds and by implementing selective adjacent off-site weed removal.

Mitigation Measure Bot-3b: Implement Avoidance Measures in Areas Adjacent to the Delevan National Wildlife Refuge

During construction of the Delevan Pipeline and Transmission Line, DWR and Reclamation shall avoid the placement of large staging areas within the portion of the construction disturbance area that borders the Delevan NWR.

Mitigation Measure Bot-4: Implement Vegetation Monitoring in Coordination with USFWS

DWR and Reclamation, in coordination with USFWS, shall monitor the effects of human activities on the health of sensitive areas adjacent to Project facilities.

Terrestrial Biological Resources

Mitigation Measure Wild-1a: Implement a Combination of Habitat Protection, Enhancement, Restoration, or Conservation Easement Measures, in Consultation with USFWS

For all three action alternatives, the acreage of permanent habitat loss within the Recreation Areas and the Road Relocations, as well as the temporary habitat disturbance within the construction disturbance areas for most facilities, was estimated. Because these acres are estimated, it may be possible to avoid impacts to certain habitat types.

A Habitat Evaluation Procedures assessment of the Primary Study Area was conducted under the lead of USFWS. A determination of appropriate mitigation measures for the habitat types that would be adversely affected within the Primary Study Area shall be made using the results of the HEP assessment, as well as through consultation with USFWS pursuant to the Fish and Wildlife Coordination Act. Mitigation measures could include but not be limited to protection, enhancement, restoration, or conservation easement.

Mitigation Measure Wild-1b: Implement Bat Exclusion Measures Prior to Demolition of Existing Structures

Prior to structure demolition, structures shall be inspected by a qualified biologist to determine if bats are present, and if present, to determine if the structure is being used as a day, night, or maternity roost. If a roost is present, appropriate bat exclusion measures shall be implemented at least five to seven days prior

to structure demolition outside of the maternity season, which can range from mid-April through August 31, and outside of the winter months when bats could be hibernating. Bat exclusion measures could include one-way devices such as polypropylene netting, plastic sheeting, or tube-type excluders that would be placed at all active entry points. If a roost is present in a structure located outside of a reservoir inundation area, possible avoidance measures could include retaining the structure.

Mitigation Measure Wild-2a: Obtain Permit for Bald Eagle Nest Tree Removal, Remove Nest Tree Outside of Breeding Season, and Create Suitable Habitat

A permit to remove or relocate an eagle nest shall be obtained from USFWS. The bald eagle nest tree shall be removed outside of the breeding season, which ranges from January through July, to avoid direct impacts. Dam construction activities shall not occur during the breeding season until the nest tree is removed. After construction is complete, the filling of Sites Reservoir and Holthouse Reservoir would create new fish-bearing lacustrine habitat in an area that is surrounded by suitable bald eagle nest trees. Following inundation, releases downstream of Golden Gate Dam would restore flows to Funks Creek to maintain fisheries and bald eagle habitat.

Mitigation Measure Wild-2b: Implement Protective Actions to Prevent Bank Swallows from Nesting in the Cut Banks of Project Construction Trenches

Construction of the pipelines shall begin in May due to giant garter snake restrictions. May falls within the bank swallow breeding season (ranging from mid-March through July). Protective action shall be taken to prevent bank swallows from attempting to nest within the cut banks of the pipeline trenches. Actions shall include the placement of a mesh net on all cut banks during the bank swallow nesting season, and implementation of **Mitigation Measure Wild-3a** to ensure that trenches are backfilled within 72 hours of pipeline installation.

Mitigation Measure Wild-2c: Conduct Pre-Construction Surveys for Giant Garter Snakes and Implement Protective Actions; Conduct Project Construction Activity Between May 1 and October 1 in Giant Garter Snake Habitat; Compensate for Temporary Disturbance of Habitat According to USFWS Guidelines

Protective actions shall be taken to avoid or minimize impacts to the giant garter snake. Protective actions and mitigation measures shall comply with the USFWS's Programmatic Biological Opinion (USFWS, 1997) and could include the following actions:

- Preconstruction surveys shall be conducted within 24 hours prior to the start of construction in giant garter snake habitat. If a snake is encountered during construction, activities shall cease until corrective measures have been completed. Any sightings shall be reported to USFWS.
- Exclusion fencing shall be placed around construction areas within giant garter snake habitat to ensure that snakes do not enter the area. Exclusion fencing shall also be used around any agricultural irrigation ditches within 200 feet of the disturbance area.
- Construction activity within giant garter snake habitat shall be conducted between May 1 and October 1. If work outside of this time period is necessary, USFWS's Sacramento Fish and Wildlife Office shall be contacted to determine which additional protection measures are necessary.
- Construction personnel shall receive USFWS-approved environmental awareness training so that workers can recognize giant garter snakes and their habitats.

- Clearing shall be confined to the defined construction disturbance area.
- Rice fields shall be fallowed prior to the start of construction, and any dewatered habitat shall remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
- Construction between May and September in wetlands shall be restricted to prevent inadvertent mortality of giant garter snakes.
- A trained biological monitor shall be onsite during construction activities to inspect around the work equipment and within the trench and surrounding disturbance area each day before work begins.
- **Mitigation Measure Wild-3a** shall be implemented to avoid potential entrapment of a snake in the pipeline trench.
- After construction is complete, habitat shall be restored to pre-Project conditions.

Temporary disturbance to giant garter snake habitat would typically be mitigated at a ratio of 1:1. However, construction activity for the Delevan Pipeline is scheduled to occur during three giant garter snake seasons (season is from May 1 through October 1). Any disturbance lasting longer than two seasons is considered to be a permanent loss of habitat and shall be mitigated at a ratio of 3:1, with some of the mitigation compensated for through restoration of the area after Project construction is complete. If Project construction is conducted outside of the May 1 through October 1 active season, mitigation at a ratio of 6:1 could be required.

Disturbance to fresh emergent wetland habitat could, and shall to the extent feasible, be avoided by reducing the use of the construction buffer in areas of this habitat type, or altering the footprint of the road. Mitigation for rice habitat would already be partially compensated for by implementation of the mitigation for loss of wildlife habitat types described above.

Mitigation Measure Wild-2d: Implement Avoidance and Minimization Measures at Historic or Active Golden Eagle Nest Sites; Conduct Satellite Telemetry Studies Pre- and Post-Construction to Determine Territory Size; Prepare a Golden Eagle Protection Plan and a Golden Eagle Monitoring Plan; Mitigate for Loss of Annual Grassland Foraging Habitat

Golden eagle nests were observed within the footprint of three of the five proposed Recreation Areas during field surveys. Subsequent surveys documented that the nest at Lurline Headwaters Recreation Area no longer exists, the nest at Peninsula Hills Recreation Area is still active, and the nest at Stone Corral Recreation Area is falling apart, but is still active. An active golden eagle nest also exists outside, but in the vicinity, of the Sites Dam footprint.

Construction activities shall be modified to ensure that nesting golden eagles are protected. To avoid impacts to nesting golden eagles at Peninsula Hills, construction of the recreation area would be deferred. To avoid or minimize possible impacts to nesting golden eagles in other construction areas, some or all of the following measures shall be implemented:

- A bird detraction program shall be implemented near historic golden eagle nest sites to discourage eagles from returning to those sites.
- Construction near recently active nest sites shall start outside the active nesting season. The nesting period for golden eagles is between March 1 and August 15.

- If groundbreaking activities begin during the nesting period, a qualified biologist shall perform a pre-construction survey 14 to 30 days before the start of each new construction phase to search for golden eagle nest sites in appropriate habitat within 0.5 mile of proposed activities. If active nests are not identified, no further action is required and construction may proceed.
- If active nests are identified, a minimum 0.5 mile buffer zone around active golden eagle nests shall be implemented. Buffer zones shall remain until young have fledged. For activities conducted with agency approval within this buffer zone, a qualified biologist shall monitor construction activities and the eagle nest(s) to monitor eagle reactions to activities. If activities are deemed to have a negative effect on nesting eagles, the biologist shall immediately inform the construction manager that work should be halted, and CDFG and USFWS will be consulted.
- For golden eagles that begin nesting within the buffer zone after start of construction, the same avoidance and minimization measures as described for active eagle nests found before start of construction (0.5 mile buffer) shall be implemented. A buffer of less than 0.5 mile may be used if there is a visual barrier, such as a hill or dense trees, between the construction activity and the nest.

After construction is complete, it is possible that golden eagles will nest within the constructed Recreation Areas. In this situation, the following avoidance and minimization measures shall be implemented:

- After construction, golden eagle nesting sites shall be surveyed and monitored within and adjacent to the Recreation Areas to ensure that recreational activities do not disrupt eagle nest sites. Surveys shall be performed at the beginning of, and continue through, the nesting season. Consistent with avoidance guidelines, recreational access and other disruptive activities shall be suspended within 0.5 mile of active golden eagle nests until the young eagles have fledged.

The filling of Sites Reservoir would result in the loss of more than 11,600 acres (Alternative A) and almost 13,200 acres (Alternatives B and C) of annual grassland that provides foraging habitat for golden eagles. To assess the impact of this loss of foraging habitat, the following measures shall be implemented prior to the start of Project construction:

- A Golden Eagle Monitoring Plan shall be prepared.
- Satellite telemetry studies shall be conducted for three to five years prior to the start of construction to establish the number of golden eagles and the size of their territories.
- Surveys shall be conducted by permitted biologists.
- A Golden Eagle Protection Plan shall be prepared.

After construction is complete, at least five years of telemetry studies (to be determined during consultation with USFWS) shall be conducted to determine the effect of habitat loss. The loss of the annual grassland habitat shall be mitigated during consultation with USFWS; mitigation may include the preservation of annual grassland habitat located near the Primary Study Area that could provide foraging habitat for golden eagles, or could consist of restoring a historic foraging site that is no longer used because of an impact.

Mitigation Measure Wild-2e: Implement Protective Actions to Minimize Impacts to the Ringtail, and Restore Connectivity of Riparian Corridor

The fully-protected ringtail was observed within the riparian habitat that would be removed during construction of the Delevan Pipeline Intake/Discharge Facilities. The removal of riparian habitat within

the footprint of the facilities would further reduce connectivity of the riparian corridor at that location. Implementation of **Mitigation Measure Wild-3c** would restore that connectivity. To minimize potential direct impacts to the ringtail, riparian vegetation removal shall not occur during the early pup-rearing season, which ranges from May 1 through June 15. Efforts to restore riparian corridor connectivity could include other habitat enhancements, such as providing ringtail nesting cavities and planting food sources.

Mitigation Measure Wild-2f: Implement Protective Actions to Avoid or Minimize Impacts to Elderberry Plants; Where Avoidance is not Possible, Transplant or Replace Plants, According to USFWS Guidelines

There are two elderberry shrubs located within the potential construction disturbance area for Sites Reservoir and Dams that could be completely avoided by establishing and maintaining a 100-foot-wide or wider buffer around them. Construction crews shall be briefed regarding the need to avoid these plants, and signs shall be posted during construction to avoid the buffer area. After Project construction is complete, this area would not be affected by Project operation or maintenance.

The elderberry shrub immediately adjacent to the footprint of the Delevan Pipeline Intake/Discharge Facility is located on the edge of an irrigation canal that is situated along an existing access road. Because of its proximity to the road, it would not be possible to establish a 100-foot-wide buffer. It would also not be possible to establish a 100-foot-wide buffer for the shrubs located immediately adjacent to the existing Maxwell Sites Road. Consultation with USFWS would be initiated for possible approval to encroach on the buffer. Otherwise, appropriate mitigation measures shall be implemented.

The elderberry shrubs within the footprint of Sites Reservoir, Sites Dam, and Golden Gate Dam, as well as the one shrub within the footprint of the Delevan Pipeline Intake/Discharge Facility, would not be avoided by Project construction, and therefore, shall be transplanted or replaced, depending on the likelihood of survival post-transplantation. Transplantation procedures shall comply with USFWS's 1999 Conservation Guidelines for the Elderberry Longhorn Beetle (USFWS, 1999). If transplantation is not feasible, USFWS general guidelines require replacement of elderberry plants in designated mitigation areas. Elderberry plants are typically replaced at a ratio of 2:1 for stems greater than one inch in diameter at ground level with no adult emergence holes, 3:1 for stems where emergence holes are documented in less than 50 percent of the shrubs, and 5:1 for stems greater than one inch in diameter with emergence holes.

Mitigation measures already required for the loss of riparian habitat pursuant to the mitigation for loss of wildlife habitat types described above could potentially compensate for the native planting requirement for elderberry plant mitigation.

Mitigation Measure Wild-2g: Conduct Pre-Construction Surveys for Western Burrowing Owls; If Owls are Found, Implement Protective Actions

Pre-construction surveys shall be conducted in annual grasslands within the footprint of Sites Reservoir and within the construction disturbance area of the Road Relocations to determine if burrowing owls are present. These surveys shall be conducted within 30 days of ground-disturbing construction activities or the start of the filling of reservoir. Surveys shall be conducted by a qualified biologist in compliance with the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). If burrowing owl burrows are found, protective measures shall be implemented.

Protective measures may include avoidance of occupied burrows during the nesting season, which is from February 1 through August 31, with the peak of the season occurring from April 15 through July 15. Any

unoccupied burrows located within the immediate construction area shall be excavated using hand tools, and then filled to prevent reoccupation.

If destruction of occupied burrows is unavoidable, such as within the footprint of Sites Reservoir, burrow entrances shall be altered, outside of the nesting season, to allow resident owls to exit but not re-enter the burrow. Owls shall be excluded from burrows by installing one-way doors in burrow entrances. One-way doors shall be left in place for at least 48 hours to ensure owls have left the burrow before the start of construction. Other possible mitigation could include the creation of artificial burrows in adjacent suitable habitat.

Loss of annual grassland habitat shall be compensated for with implementation of the mitigation for loss of wildlife habitat types described above.

Mitigation Measure Wild-2h: Conduct Pre-Construction Surveys and Provide a Biological Monitor During Project Construction for the Western Pond Turtle; If Found, Turtles shall be Captured and Relocated by a Qualified Biologist

Before construction activities begin, a qualified biologist shall conduct western pond turtle surveys along creeks and other ponded areas within the footprint of Sites Reservoir, Sites Dam, and Holthouse Reservoir, as well as along the irrigation canals within the construction disturbance area of the Delevan Pipeline. Adjacent upland areas shall also be examined for evidence of nests or individual turtles. A Project biologist shall be responsible for conducting the survey and relocating any turtles found within footprints or construction disturbance areas. If a nest is observed, a biologist with appropriate permits and prior approval from CDFG shall move eggs to a suitable location or facility for incubation. However, some individuals may be undetected or enter sites after surveys are conducted, and could be subject to mortality. A biological monitor shall, therefore, be present during Project construction to minimize take.

Mitigation Measure Wild-2i: Conduct Pre-Construction Surveys for the Western Yellow-Billed Cuckoo and Schedule Construction Activities to Avoid Impacts to Nest Sites

The yellow-billed cuckoo breeding season ranges from mid-June through August. To minimize direct impacts to this species, riparian and orchard vegetation removal within the footprint of the Delevan Pipeline Intake/Discharge Facility shall occur outside of these dates. If construction activities are scheduled to occur during the breeding season, preconstruction surveys shall be conducted in riparian and orchard habitat within the construction disturbance area of the Delevan Pipeline Intake/Discharge Facility to confirm that cuckoos are not actively nesting in or near the area. If active nests are identified, a minimum 500-foot construction buffer shall be established around any nest sites. All construction shall be avoided where active nests are discovered until the cuckoos have finished nesting.

Loss of valley foothill riparian and deciduous orchard habitat shall be compensated for with implementation of the mitigation for loss of wildlife habitat types described above.

Mitigation Measure Wild-3a: During Project Construction, Backfill Trenches within 72 hours of Pipeline Installation and Provide an Escape Ramp for Trapped Wildlife

Pipeline trenches shall be backfilled within 72 hours of pipeline installation to prevent potential impacts to trapped wildlife. The trench shall be inspected for wildlife before it is filled. At the end of each day, a ramp shall be placed at the end of the trench at an approximate 45 degree slope to allow trapped wildlife to escape. In addition to a ramp, the trench shall be covered to prevent wildlife from falling in.

Mitigation Measure Wild-3b: Construct Transmission Lines and Associated Equipment Following Suggested Practices for Avian Protection on Power Lines

Transmission lines, poles, and associated equipment shall be properly fitted with wildlife protective devices to isolate and insulate structures to prevent injury or mortality to wildlife, especially avian species. Protective measures shall follow the guidelines provided in Suggested Practices for Avian Protection on Power Lines (APLIC, 2006), and shall include insulating hardware or conductors against simultaneous contact, using poles that minimize impacts to birds, and increasing the visibility of conductors or wires to prevent or minimize bird collisions.

Mitigation Measure Wild-3c: Restore Riparian Habitat Connectivity

After the Delevan Pipeline Intake/Discharge Facilities are constructed, riparian habitat connectivity shall be restored to provide a travel corridor for terrestrial wildlife. The entire length of the land side of the new levee associated with the facilities shall be planted with riparian vegetation. Where the levee approaches SR 45, fencing shall be installed to protect wildlife from vehicles. Vegetation shall be monitored, and irrigated if necessary, to ensure survival.

Mitigation Measure Wild-4: Implement Avoidance and Minimization Measures

Measures to avoid or minimize human disturbance impacts associated with Project construction and maintenance activities shall include the following:

- Provide worker awareness training to all construction personnel prior to the start of construction activities; such training shall explain how to avoid impacts to sensitive species or habitats.
- Require construction personnel to comply with applicable federal, State, and local laws and regulations regarding prevention and control of noise during Project construction.
- Equip construction equipment engines with adequate mufflers, intake silencers, and engine enclosures.
- Turn off construction equipment during prolonged periods of nonuse to eliminate noise.
- Maintain all equipment appropriately, and train equipment operators regarding good practices to reduce noise levels.
- Minimize light pollution to the greatest extent practicable. Measures may include, but not be limited to, light hoods/shields, directional lighting, or minimum required brightness.
- Conduct pre-construction surveys in habitat types for special-status species. If found, protective actions shall be taken to passively relocate wildlife as needed.
- Use exclusion fencing or equivalent to prevent wildlife from entering the Project construction area. Fencing shall be removed after construction is complete.
- A biological monitor shall be on-site during Project construction in habitat associated with special-status species.
- Removal of trees and other vegetation shall occur outside of the breeding/nesting season of associated special-status species, and shall be completed prior to the start of reservoir filling to minimize impacts to tree- or shrub-nesting species. If Project construction must occur during the breeding/nesting season, a USFWS or DFG-approved buffer shall be established around the sensitive areas.

- Demolition of structures and bridge maintenance shall occur outside of the breeding/roosting season. If Project construction or maintenance must occur during this period, exclusionary devices shall be installed during late fall or winter to prevent roosting in structures.
- Maintenance of transmission lines or towers shall not be conducted during the nesting season in proximity to an active raptor nest.
- Food-related garbage items, such as wrappers, cans, bottles, or food scraps, shall not be left at the Project construction sites.
- Persons associated with the Project shall not be permitted to have pets of any kind within the Project construction sites.

Measures to avoid or minimize human disturbance impacts associated with Project recreation activities shall include the following:

- Implement adequate signage, fencing, and leash laws in areas of public access to minimize potential harassment of wildlife, including handling, by people and pets.
- Retain or plant screening vegetation along the margins of developed areas to reduce indirect impacts from lights and noise and the effects of human disturbance.
- Retain mature trees and minimize use of non-native landscaping.
- Design recreational areas with physical barriers to limit impacts to adjacent habitat.
- Revegetate areas of disturbed soil.
- Establish boat speed limits and designate no wake zones in sensitive areas to minimize disturbance of lacustrine wildlife and erosion of shoreline habitat.
- Provide adequate numbers of wildlife-proof garbage containers and maintain a pick-up schedule of at least once per week during the recreation season.
- For exterior lighting, use light shields or downward directed lighting to minimize the impacts of artificial light.

Measures to avoid or minimize impacts from human disturbance impacts associated with increased traffic during Project construction shall include the following:

- Restrict all movement of construction vehicles outside of the right-of way to pre-designated access or public roads.
- Enforce an approved speed limit on Project right-of way and access roads, unless otherwise posted, for all Project personnel.

Wetlands and Other Waters of the United States

Mitigation Measure Wet-1a: Implement Compensatory Mitigation Measures for Streams pursuant to USACE Determination within the Watershed in which the Impacts Occur

Compensatory mitigation for streams shall be provided for each significant impact identified by the USACE determination according to ratios determined by the USACE for the appropriate category and

degree of severity of loss or impact. Mitigation shall occur within the watershed in which the impacts occur:

- Sites Reservoir & Dams, Recreation Areas - Funks/Hunter/Antelope/Grapevine/Stone Corral Creek watersheds.
- Delevan Pipeline Intake Facilities, Delevan Pipeline Discharge Facility – Sacramento River adjacent to facility location.
- Road Relocations, Funks Reservoir, Holthouse Reservoir Complex, Sites Inlet/Outlet Structure and associated facilities, Field Office Maintenance Yard, Electrical Switchyard –Funks Creek watershed.

Mitigation Measure SW Qual-1c(1): Implement Soil Stabilization and Sediment Control BMPs

During Project construction activities, on-site monitoring shall be performed to identify runoff impacts. Appropriate soil stabilization BMPs; such as hydroseeding and application of other soil binders; installation of culverts, pipelines, and lined ditches to divert stormwater around disturbed soil areas; dust suppression through application of water to unpaved access roads; and placing cover material over material stockpiles; shall be implemented to reduce potentially significant construction impacts from erosion to a less-than-significant level. Sediment control BMPs, such as installation of fiber rolls and straw bales, settling/desilting basins, and other control measures, shall be implemented to reduce potentially significant construction impacts to wetlands and waters of the U.S. through sedimentation to a less-than-significant level. Details of these BMPs are described in Section WM-3 of the *Construction Site Best Management Practices Manual* (Caltrans, 2003).

Mitigation Measure Wet-1b: Reroute Canals to Ensure Continued Hydrological Connection, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination

For impacts to canals, mitigation shall include re-routing the canals to ensure continued hydrological connection to traditional waters of the U.S. Loss of emergent wetland habitat from within canals shall be mitigated for in other ways, as recommended by the USACE.

Mitigation Measure Wet-1c: Restore Ponds to Original Condition, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination within the Same Hydrologic Unit in which the Ponds Occur

The pond located 3.5 miles west of the Sacramento River within the Delevan Pipeline construction disturbance area should be restored after construction is completed to its current condition as an agricultural pond. If restoration is not possible, compensatory mitigation measures, pursuant to USACE determination, shall be implemented within the Hunters Creek-Logan Creek watershed downstream of their confluence.

Mitigation Measure Wet-2a: Conserve, Enhance, Restore, or Create Seasonal Wetlands, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination within the Watershed in which the Impacts Occur

For the seasonal wetlands located along the edge of Funks Reservoir, alter the extent of dredging so that the slope of the reservoir bottom is more tapered at this point.

Mitigation Measure Wet-2b: Conserve, Enhance, Restore, or Create Alkaline Wetlands, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination within the Watershed in which the Impacts Occur

The local saline spring areas further upslope in same geological formation as the springs that feed Salt Lake shall be enhanced. These springs are located outside of the Sites Reservoir footprint but in the creases of the foothills due north of Salt Lake. Some of them may be able to be expanded, and could possibly be partially protected from grazing impacts with the installation of protective fencing.

A conservation agreement shall be entered into with Reclamation to manage and protect the entire alkaline wetland area southeast of Holthouse Reservoir. Management shall include burning and grazing regimes similar to those used effectively on the Sacramento NWR.

A purchase or conservation agreement shall be entered into with the utilities or other landowners to protect and manage other saline/alkaline wetland habitats in parcels east of the T-C Canal, north of the Primary Study Area. Protected areas might include a potential alkaline wetland area southeast of the Colusa Generating Station located along the T-C Canal.

For the Holthouse Reservoir alkaline wetlands, a hydrogeologic study shall be conducted to determine the direction and sources of water supplying the seeps, swales, and main wetland area, to better inform evaluation of potential effects of placing the dam and reservoir in proximity of the wetland's west edge. The study shall include testing of the wetland area's water and soils, and may allow for development of minimization measures.

Mitigation Measure Wet-2c: Conserve, Enhance, Restore, or Create Vernal Pools Equivalent to the Type of Vernal Pools Adversely Impacted, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination

For vernal pools, the type of vernal pools conserved elsewhere shall be equivalent to the type lost from the Primary Study Area – most likely, claypan and alkaline vernal pools. Consultation with vernal pool experts shall occur to ensure ecological equivalence.

Mitigation Measure Wet-2d: Conserve, Enhance, Restore, or Create Emergent Wetlands, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination within the Watershed in which the Impacts Occur

[Text to be developed]

Mitigation Measure Wet-2e: Conserve, Enhance, Restore, or Create Comparable Riparian Wetlands in the Inner Coast Range Foothills, or Implement other Compensatory Mitigation Measures pursuant to USACE Determination

For the two-acre riparian wetland and waters of Funks Creek lost to Holthouse Reservoir, a comparable area in the inner coast range foothills shall be selected for restoration and conservation.

Geology, Minerals, Soils and Paleontology

Geology and Soils

Mitigation Measure Geo/Soils-2: Implement a Project Erosion and Sediment Control Plan, and Stormwater Pollution Prevention Plan, during Project Construction, Operation, and Maintenance

To minimize soil erosion and loss of topsoil, DWR and Reclamation shall include in the construction contract the requirement for the preparation of an Erosion Control Plan prior to the start of Project construction and its implementation during Project construction. DWR and Reclamation shall also prepare an Erosion and Sediment Control Plan, and Stormwater Pollution Prevention Plan that shall be implemented during Project construction, operation, and maintenance. Both Plans shall meet all local requirements and incorporate Best Management Practices (BMPs). BMPs may include, but would not be limited to:

- Preservation of existing vegetation
- The use of silt fences and/or straw bales and sheetpiles to separate project construction sites from waterways.
- Covering soil stockpiles with mulch or matting, as well as continuous maintenance of erosion control measures
- PennzSuppress® dust suppressant, or an equivalent product, to stabilize soil during and after construction
- Timely revegetation of disturbed sites to minimize post-construction erosion impacts. The use of native seeds and plants to assist in the conservation and enhancement of protected species shall be considered, as required by Section 7(a)(1) of the Endangered Species Act (ESA).

Mitigation Measure Geo/Soils-3: Perform a Geotechnical Investigation due to Expansive Soils at Project Facility Sites

A site-specific design-level geotechnical investigation, prepared by a licensed professional, shall be performed. The geotechnical investigation shall include measures to ensure potential damage related to expansive soils and non-uniformly compacted fill and engineered fill are minimized. Mitigation options may range from removal of the problem soils, and replacement, as needed, with properly conditioned and compacted fill, to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements. All design criteria and specifications set forth in the geotechnical investigation shall be implemented to reduce impacts associated with problem soils.

Mitigation Measure Geo/Soils-4: Implement Avoidance Measures for Soils that are Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems where Sewers are not Available for the Wastewater Disposal

During Project design, Project engineers shall consider the soil types when designing the necessary septic tank facilities, and shall incorporate and implement measures to accommodate such facilities or their alternatives. Alternatives could include mound, lagoon, or constructed wetlands systems (University of Kentucky, 2001).

Paleontology

Mitigation Measure Paleo-1a: Retain a Qualified Paleontological Resource Specialist Prior to the Start of Construction

DWR and Reclamation shall retain a qualified Paleontological Resource Specialist at least 90 days prior to the start of construction. DWR and Reclamation shall keep resumes on file for the Paleontological Resource Specialist as well as qualified Paleontological Resource Monitors working on the Project. The Paleontological Resource Specialist shall meet the minimum or equivalent qualifications for a paleontological resources manager, as described in the Society of Vertebrate Paleontology guidelines of 1995. The experience of the Paleontological Resource Specialist shall include the following:

- Ability to recognize and collect fossils in the field
- Geological and biostratigraphic expertise
- Proficiency in identifying vertebrate and invertebrate fossils, and in assessing their scientific significance
- At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities

DWR and Reclamation shall ensure that the Paleontological Resource Specialist obtains qualified paleontological resource monitors to monitor Project construction activities, as the Paleontological Resource Specialist determines necessary on the Project. Paleontological Resource Monitors shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California

Mitigation Measure Paleo-1b: Consultation with the Paleontological Resource Specialist Prior to and During Project Construction

At least 30 days prior to the start of Project construction, DWR and Reclamation shall provide maps or drawings to the Paleontological Resource Specialist that show the planned construction footprint. Maps shall identify all areas of the Project where ground disturbance is anticipated. (Site grading plan and plan and profile drawings for the utility lines are appropriate for this purpose). The plan drawings shall show the location, depth, and extent of all ground disturbances affecting paleontologically sensitive sediment. If Project construction proceeds in phases, maps and drawings may be submitted prior to the start of each phase. In addition, the proposed schedule of each Project phase shall be provided to the Paleontological Resource Specialist. Before work commences on affected phases, DWR and Reclamation shall notify the Paleontological Resource Specialist of any construction phase scheduling changes. If paleontological resources monitoring is ongoing, DWR and Reclamation shall ensure that the Paleontological Resource Specialist or Paleontological Resource Monitor consults weekly with the Project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

Mitigation Measure Paleo-1c: Prepare and Implement a Paleontological Resources Monitoring and Mitigation Plan

DWR and Reclamation shall ensure that the Paleontological Resource Specialist prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by DWR and Reclamation shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for paleontological resources monitoring, collecting, and sampling activities, and may be modified by the Paleontological Resource Specialist to accommodate new data or Project changes. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the Paleontological Resource Specialist, each monitor, DWR's and Reclamation's on-site manager, and DWR and Reclamation.

The PRMMP shall be developed in accordance with professional guidelines, and be consistent with those issued by the Society of Vertebrate Paleontology (SVP, No Date), and shall include, but not be limited to, the following:

Procedures for the performance and sequence of resource-related tasks, such as any literature searches, pre-construction surveys, appropriate worker environmental training module, construction monitoring, mapping and data recovery, discovery situations, fossil preparation and collection, identification and inventory, preparation of final reports, transmittal of materials for curation, and final report shall be provided in the PRMMP, including:

- A discussion of the geologic units expected to be encountered, the location and depth of the units relative to the Project, when known, and the known paleontological sensitivity of those units
- A discussion of the locations of where the monitoring of Project construction activities is deemed necessary, and a proposed plan for monitoring and sampling
- An explanation of why, how, and how much sampling is expected to take place and in what units, including descriptions of different sampling procedures that may be used
- A discussion of procedures to be followed in the event of a significant fossil discovery, diverting construction away from a find, resuming construction, and how notifications will be performed
- A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits
- Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources
- Identification of the institution(s) that will be approached to receive data and fossil materials collected, and requirements or specifications for materials delivered for curation

The PRMMP shall also provide guidance for preparation of a Paleontological Resources Report by the designated Paleontological Resource Specialist at the conclusion of ground-disturbing activities that may affect paleontological resources. The Paleontological Resources Report shall include an analysis of the collected fossil materials and related information, including a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered, determinations of

sensitivity and significance, and a statement by the Paleontological Resource Specialist that Project impacts to paleontological resources have been mitigated below the level of significance.

Mitigation Measure Paleo-1d: Conduct Paleontological Resources Awareness Training

Prior to ground disturbance and for the duration of Project construction activities involving ground disturbance, the Paleontological Resource Specialist shall prepare, and DWR and Reclamation shall conduct, weekly paleontological resources awareness training for the following workers: project managers, construction supervisors, forepersons, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in paleontologically sensitive sediments prior to receiving paleontological resources awareness training. Worker training shall consist of a video or in-person presentation. The paleontological resources awareness training module may be combined with other training modules prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern.

The paleontological resources awareness training shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The training shall include:

- A discussion of applicable laws and penalties under the law
- Good quality photographs or physical examples of vertebrate fossils
- Information that the Paleontological Resource Specialist or Paleontological Resource Monitor has the authority to halt or redirect construction in the vicinity of a fossil discovery or unanticipated impact to a paleontological resource
- Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the Paleontological Resource Specialist or Paleontological Resource Monitor
- An informational brochure that identifies reporting procedures in the event of a discovery
- A certification of completion form signed by each worker indicating that he/she has received the training

Mitigation Measure Paleo-1e: Conduct Monitoring During Project Construction and Prepare Monthly Reports

DWR and Reclamation shall ensure that the Paleontological Resource Specialist and Paleontological Resource Monitor(s) monitor construction excavations consistent with the PRMMP in areas where potential fossil-bearing materials have been identified, both at reservoir sites and along any constructed linear facilities associated with the Project. In the event that the Paleontological Resource Specialist determines full-time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the Paleontological Resource Specialist shall notify DWR and Reclamation.

DWR and Reclamation shall ensure that the Paleontological Resource Specialist and Paleontological Resource Monitor(s) have the authority to halt or redirect construction if paleontological resources are encountered. DWR and Reclamation shall ensure that there is no interference with monitoring activities, as directed by the Paleontological Resource Specialist.

DWR and Reclamation shall ensure that the Paleontological Resource Specialist prepares and submits monthly summaries of monitoring and other paleontological resources management activities. The summary shall include the name(s) of the Paleontological Resource Specialist or Paleontological Resource Monitor(s) active during the month, general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings, if any, and a list of identified fossils. A final section of the report shall address any issues or concerns about the Project relating to paleontological resources mitigation activities, including any incidents of non-compliance or any changes to the monitoring plan by the Paleontological Resource Specialist. If no monitoring took place during the month, the report shall include an explanation as to why monitoring was not conducted.

Mitigation Measure Paleo-1f: Ensure Implementation of the Paleontological Resources Monitoring and Mitigation Plan

DWR and Reclamation, through the designated Paleontological Resource Specialist, shall ensure that all components of the PRMMP are adequately performed during construction.

Faults and Seismicity

Mitigation Measure Seis-1: Implement Slope Stabilization Methods; Design Facilities to Withstand Fault Rupture, Seismic Ground Shaking, Ground Failure, and Liquefaction

- The two main Project dams would be located on a fault. To minimize potential seismic-related Project impacts, the Project design includes features such as wide clay cores and additional filter material to reduce the risk of dam failure. In addition, temporary and permanent excavation cut slopes shall be designed to be stable. If slope instability is detected, excavation cut slopes shall be stabilized by flattening, installing engineered retaining structures, and/or providing appropriate drainage elements. Shoring shall be used to support vertical trench walls. Re-sloping or removal is the most common method of landslide or slope stabilization. Structural solutions are as listed. The proposed dams, dikes, and powerplants shall be designed to survive fault rupture, seismic ground shaking and ground failure, and liquefaction without loss of the reservoir or catastrophic damage. These hazards are of far less concern during construction when there is no potential for an uncontrolled reservoir release. Additionally, the probability of these hazards occurring during the relatively short Project construction period is remote, and steps to mitigate for them are not typically included in the design of a temporary structure. Construction mitigation would normally include excavating stable cutslopes and locating staging areas away from steep slopes or areas of suspected liquefiable soils or ground rupture. Dewatering may be required for temporary excavation cutslopes and shored or un-shored trenches (CGS, 1997). During Project operation, landslide mitigation shall include adding earth or rock buttresses at the toes of potential slope failures following best management practices (BMPs) (USGS, 2000). Additionally, restraining walls, piles, caissons, rock anchors, or geotextiles shall be used to prevent or control slope movement.

Cultural Resources

Mitigation Measure Cul-1a: Avoid Impacts to Historical Resources/Historic Properties

If feasible, impacts to identified historical resources/historic properties, including prehistoric and historic-era archaeological sites, buildings and structures, TCPs, and human remains shall be avoided. Methods of avoidance may include, but are not limited to, Project re-design, or, when appropriate, deeding the site

into a permanent conservation easement; incorporation of sites into parks, greenspace, or other open space; and protection measures, such as fencing.

Mitigation Measure Cul-1b: Conduct Archaeological Data Recovery

If it is infeasible to avoid impacts to archaeological sites that have been determined to be eligible for listing on the CRHR or the NRHP, additional research including, but not necessarily limited to, archaeological excavation shall be conducted. This work shall be directed by a qualified archaeologist who meets the U.S. Secretary of Interior's professional standards, and shall include preparation of a research design; additional archival and historical research to supplement the research design, when appropriate; archaeological excavation; analysis of artifacts, features, and other attributes of the resource; and preparation of a technical report documenting the methods and results of the investigation in accordance with the California Office of Historic Preservation Guidelines for Archaeological Research Design (1991). The purpose of this work is to recover a sufficient quantity of data to compensate for damage to or destruction of a resource that is eligible for the CRHR pursuant to criterion 4 of CCR 4852(b) or the NRHP pursuant to 36 CFR 60.4(d). The procedures to be used in this data recovery program shall be determined in consultation with responsible agencies and interested parties such as Native American tribes, as appropriate, within the parameters of the PA.

Mitigation Measure Cul-1c: Immediately Halt Construction if Cultural Resources are Discovered and Implement an Accidental Discovery Plan

Not all cultural resources are visible on the ground surface. Protocols for addressing the accidental discovery of archaeological resources that are not visible on the ground surface during Project construction will be outlined in an Accidental Discovery Plan, as directed by the PA. If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any Project construction activities, work shall be suspended immediately at the location of the find and within an appropriate radius, with a minimum of 50 feet. A qualified archaeologist shall conduct a field investigation of the specific site and recommend mitigation deemed necessary for the protection or recovery of any cultural resource concluded by the archaeologist to represent a historical resource or unique archaeological resource. Mitigation measures shall be developed in consultation with responsible agencies and, as appropriate, interested parties such as Native American tribes. Implementation of the approved mitigation would be required before resuming construction activities at the archaeological site. All of the activities identified above shall be detailed in an Accidental Discovery Plan developed prior to construction so that all parties are aware of the actions required if buried archaeological resources are uncovered during Project construction. Discoveries of human remains shall be treated as described below for Mitigation Measure Cul-4b.

Mitigation Measure Cul-1d: Protection of Archaeological Sites by Capping

Capping archaeological sites that are considered historical resources with soil, gravels, rock, or specific kinds of vegetation can be a viable way to protect the deposits under some circumstances. For example, sites subject to inundation and water level fluctuations may be protected from erosion by applying a layer of gravel/rock (rip-rap), soil, cloth, or some combination of treatments. In such circumstances, regular monitoring would be required to evaluate the efficacy of the mitigation, and to identify if and when it is necessary to refresh the protection. A layer of soil, i.e., sterile fill, might also be placed over a site where construction of a building was planned, such that all construction disturbance would occur in the fill

material. Planting vegetation, such as poison oak, wild rose, or blackberry brambles, over the top of a site is a useful deterrent for areas subject to looting.

Mitigation Measure Cul-1e: Develop Agreement Documents to Address Potential Future Operational Impacts to Cultural Resources

Protocols for addressing potential future operations impacts at Sites Reservoir and at existing facilities within the Extended Study Area shall be addressed in the PA. This may include preparation of Memoranda of Agreement for specific facilities and/or development of a Cultural Resources Management Plan, depending on the lead agency in charge of the facility. Management of historical resources/historic properties under such agreement documents might include standard measures for identification of historical resources/historic properties where needed, assessment of project impacts, and application of specific mitigation measures, as well as protocols for resource monitoring or stabilization techniques. Such agreement documents shall be developed in consultation with responsible agencies and interested parties, such as Native American tribes, as appropriate, within the parameters of the PA.

Mitigation Measure Cul-2a: Follow the Secretary of the Interior's Standards for the Treatment of Historical Resources/Historic Properties

Because construction of Project facilities has the potential to modify buildings or structures that are considered historical resources/historic properties, any alterations, including relocation, to historic buildings or structures shall conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995).

Mitigation Measure Cul-2b: Record Built Environment Resources to Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) Standards

If avoidance or relocation of a building or structure that is considered eligible for the CRHR or NRHP is not feasible, and the resource must be demolished, a qualified architectural historian who meets the U.S. Secretary of Interior's professional standards shall be retained to document the impacted historical architectural resource to Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) specifications. HABS and HAER documentation packages shall be entered into the Library of Congress as well as the NWIC or NEIC of the CHRIS.

Mitigation Measure Cul-3: Consult with Native American Communities regarding How to Mitigate for Impacts to TCPs

TCPs are often locations on the landscape that have sacred or other special meaning to Native American communities. Associated characteristics, such as an archaeological deposit, are not always present. Early and meaningful consultation with Native American communities shall occur to identify ways to mitigate impacts to TCPs. Interpretive programs, establishing or enhancing locations for traditional plants, or a visitor's center, are examples of ways to address these important issues. Consultation with Native American communities shall occur.

Mitigation Measure Cul-4a: Relocation of Known Cemeteries

Consultation shall occur with the entity (County, City, private) that has jurisdiction over the cemetery, and interested parties as appropriate, to identify a satisfactory place that is protected from future disturbance for the relocation of human remains. Similarly, if Native American burials are known to exist

in an archaeological site, the Project proponent shall work with the appropriate tribe to identify a satisfactory location for re-interment of burials in a protected location.

Mitigation Measure Cul-4b: Immediately Halt Construction if Human Remains are Discovered and Implement a Burial Treatment Plan

Project construction activities have the potential to have unanticipated significant impacts to buried human remains where there is no surface indication of their presence. In these circumstances, the requirements of California Health and Human Safety Code 7050.5 must be followed. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the potentially damaging excavation must halt in the area of the remains and the local County Coroner must be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Pursuant to the provisions of California Public Resources Code Section 5097.98, the NAHC shall identify a Most Likely Descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. All of the activities identified above shall be detailed in a Burial Treatment Plan, as directed by the PA, and developed in consultation with local Native American tribes prior to Project construction so that all parties are aware of the actions required if buried human remains are uncovered during Project construction.

Land Use

Mitigation Measure Land-2a: To the Extent Possible, Work with Glenn County to Encourage the County to Modify or Amend the Glenn County General Plan to Bring it into Consistency with the Proposed Project Land Uses

Prior to the start of Project construction, DWR and Reclamation shall, to the extent possible, work with Glenn County to modify or amend its General Plan for consistency with proposed Project land uses, or to implement other appropriate measures to minimize conflicts between the Project and County policies.

Mitigation Measure Land-2b: Execute an Agreement with NRCS to Amend WRP Easement Contract and Conduct Post-Construction Wetland Restoration

Prior to the start of Project construction, DWR and Reclamation shall execute an agreement with NRCS to amend the existing WRP easement contract to allow the construction and operation of the Delevan Transmission Line and Delevan Pipeline. Project Engineers shall design the transmission line and the construction contractor shall install the transmission line tower footings to span the parcel of land that has the WRP easement (a distance of approximately 680 feet). Project Engineers shall design the pipeline and the construction contractor shall install the pipeline to avoid the wetlands in the subject parcel of land, to the extent feasible. The pipeline length across the subject parcel is approximately 650 feet. Upon completion of pipeline installation, the area that was disturbed by Project construction shall be restored to a functional wetland condition.

Mitigation Measure Cul-4a: Relocation of Known Cemeteries

Consultation shall occur with the entity (County, City, private) that has jurisdiction over the cemetery, and interested parties as appropriate, to identify a satisfactory place that is protected from future disturbance for the relocation of human remains. Similarly, if Native American burials are known to exist in an archaeological site, the Project proponent shall work with the appropriate tribe to identify a satisfactory location for re-interment of burials in a protected location.

Mitigation Measure Land-3a: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Land Use Designations to Bring them into Consistency with the Proposed Project Land Uses

Prior to the start of Project construction, DWR and Reclamation shall, to the extent possible, work with Glenn and Colusa counties to modify or amend the counties' General Plan land use designations, or to implement other appropriate measures to eliminate the Project's conflicts with those designations.

Mitigation Measure Land-3b: Execute an Agreement with Maxwell Irrigation District to Minimize and Avoid Short-term and Long-Term Impacts to Existing Facilities and Operations

Prior to the start of Project construction, DWR and Reclamation shall execute an agreement with the Maxwell Irrigation District to ensure that Project construction and operation of the Delevan Pipeline Intake Facilities or the Delevan Pipeline Discharge Facility will not adversely affect the operation of the existing adjacent Maxwell Irrigation District facility.

Mitigation Measure Land-4a: Enter into Agricultural Conservation Easements with Glenn and Colusa Counties

DWR and Reclamation shall enter into agricultural conservation easement**s** with Glenn and Colusa counties **for** lands used for agricultural production to ensure agriculture remains viable in perpetuity and to prevent incompatible development on the selected parcels.

Mitigation Measure Land-5a: To the Extent Possible, Work with Glenn and Colusa Counties to Encourage the Counties to Modify or Amend the Glenn County and Colusa County General Plans' Zoning Designations to Bring them into Consistency with the Proposed Project Land Uses

Prior to the start of Project construction, DWR and Reclamation shall, to the extent possible, work with Glenn and Colusa counties to modify or amend the counties' zoning designations, or to implement other appropriate measures to eliminate the Project's conflicts with those designations.

Mitigation Measure Land-5b: Acquire Lands through Eminent Domain

During the Project land acquisition process, DWR and Reclamation shall acquire parcels through eminent domain.

Mitigation Measure Land-5c: For Land Permanently Acquired other than by Eminent Domain, Seek County Approvals to Rescind Williamson Act Contracts and Enter into Open Space Contracts or Open Space Easements

Prior to permanently acquiring lands other than by eminent domain during the land acquisition process, DWR and Reclamation shall seek County approvals to rescind Williamson Act Contracts and enter into Open Space Use Agreements or Open Space Easements with the counties.

Recreation Resources

Mitigation Rec-4a: Extend the Existing Dinosaur Point Boat Ramp at San Luis Reservoir

DWR and Reclamation shall coordinate with California State Parks' Division of Boating and Waterways to extend the Dinosaur Point boat ramp to accommodate the decreased water levels associated with Project operation. The boat ramp extension shall be constructed when San Luis Reservoir reaches a water level below 378 feet. The feasibility of this mitigation has not been evaluated.

Mitigation Measure Rec-4b: Extend the Basalt Campground Water Intake at San Luis Reservoir

DWR and Reclamation shall extend the Basalt Campground water intake to accommodate the expected decreased water levels associated with Project operation. The water intake extension shall be constructed when San Luis Reservoir reaches a water level below 345 feet. The feasibility of this mitigation has not been evaluated.

Air Quality

Mitigation Measure Air Qual -1a: Develop a Fugitive Dust Control Plan

The Fugitive Dust Control Plan shall include the following information and measures to reduce fugitive PM_{10} and $PM_{2.5}$ emissions:

- Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan.
- Description and location of construction activities.
- Listing of all fugitive dust emissions sources.

Land Clearing/Earth Moving:

- Water shall be applied by means of truck(s), hoses, and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission.
- Haul vehicles transporting soil into or out of the property shall be covered.
- Water shall be applied to disturbed areas a minimum of two times per day or more as necessary.
- A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the local air district shall also be included and visible on the sign.
- All excavation, grading, and/or earth moving activities shall be suspended when average wind speeds exceed 25 mph.

Visibly Dry Disturbed Soil Surface Areas:

- All visibly dry disturbed soil surface areas of operation shall be treated with a dust palliative agent and/or watered to minimize dust emission.

Paved Road Track -Out:

- Existing roads and streets adjacent to the Project shall be cleaned at least once per day unless conditions warrant a greater frequency.

Visibly Dry Disturbed Unpaved Roads:

- All visibly dry disturbed unpaved road surface areas of operation shall be watered to minimize dust emission.
- Unpaved roads shall be graveled to reduce dust emissions, to the extent feasible.
- Water shall be applied to disturbed areas a minimum of two times per day or more as necessary.
- On -site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- Haul roads shall be sprayed down at the end of the work shift to form a thin crust. This application of water shall be in addition to the minimum rate of application.

Vehicles Entering/Exiting Construction Area:

- Vehicles entering or exiting the construction area shall travel at a speed which minimizes dust emissions.

Employee Vehicles:

- Construction workers shall park in designated parking areas(s) to help reduce dust emissions.

Soil Piles:

- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s). Adequately secured tarps, plastic, or other material may be required to further reduce dust emissions. This includes materials stored in piles for use in the concrete batch plant.

Mitigation Measure Air Qual -1b: Implement Measures to Reduce Equipment and Vehicle Exhaust Emissions

- All construction equipment shall be maintained according to manufacturer's specifications.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).
- During all construction activities, diesel -fueled portable equipment with maximum power greater than 25 horsepower shall be registered under the ARB's Statewide Portable Equipment Registration Program.
- All fleets of diesel -fueled off -road vehicles shall comply with the emissions standards pursuant to CCR Title 13, Section 2449. To the extent feasible, operate off -road vehicles with engines certified to the Tier 2 or newer emissions standards.
- All on -road trucks shall be operated in compliance with the emission standards per CCR Title 13, Section 2025. To the extent feasible, operate on -road trucks with engines certified to the 2007 model year or newer heavy -duty diesel engine emissions standards.

- To the extent feasible, electric equipment shall be operated.
- Alternatively fueled construction equipment shall be used, to the extent feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Electricity used to power facilities and equipment shall be generated by renewable energy sources with state -of -the -art emissions control systems, to the extent feasible.

Navigation, Transportation and Traffic

Transportation and Traffic

Mitigation Measure Trans-1: Prepare and Implement a Project Operation Traffic Control Plan

DWR and Reclamation shall prepare and implement an Operation Traffic Control Plan for the Project. Consultation with Glenn and Colusa counties shall occur to determine what those agencies would require to manage the traffic congestion that is expected to occur as a result of recreationists traveling to Sites Reservoir and its Recreation Areas. It is possible that the Counties may want to wait to do any road improvements until a recreation season (or more) has passed, so that actual recreation visitation and associated traffic congestion on local roadways could be monitored.

Consultation and coordination with Caltrans shall also occur to manage traffic at onramps and offramps from I-5 that would connect to the County roads leading to Sites Reservoir and its Recreation Areas.

Consultation with local fire and sheriff departments shall occur to obtain input regarding maintaining adequate emergency response times and access to properties along the roads that comprise the routes to Sites Reservoir and its Recreation Areas.

The Operation Traffic Control Plan may include, but not be limited to, ideas such as:

- Widening the existing County roads that comprise the primary route to Sites Reservoir and its Recreation Areas, and maintaining such roads
- Signalizing or signage at intersections along the primary route to Sites Reservoir and its Recreation Areas
- Developing alternate routes to Sites Reservoir that would intersect at Maxwell Sites Road and signalizing that intersection
- Providing bus service to Sites Reservoir and its Recreation Areas and providing a Park and Ride Lot at the bus pickup location
- Provisions for maintaining emergency vehicle access (detailed measures to be developed in coordination with the local sheriff and fire departments)
- Provisions to reduce potential school bus delays that may occur as a result of Project recreation visitation traffic (detailed measures to be developed in coordination with the local school district and sheriff departments)
- Directional roadway signage to Sites Reservoir and its Recreation Areas

The Operation Traffic Control Plan shall be prepared in coordination with, and approved by, affected agencies, such as Caltrans, Glenn County, Colusa County, and Maxwell Unified School District.

Mitigation Measure Trans-3: Prepare and Implement a Project Construction Traffic Control Plan

DWR and Reclamation shall prepare and implement a Construction Traffic Control Plan for the Project. The Construction Traffic Control Plan shall include, but would not be limited to, the following measures that are intended to manage:

- Construction-related traffic
- Temporary and/or permanent bus reroutes
- Pavement repairs before and after construction
- Measures to reduce emergency vehicle delay and maintain emergency vehicle access (detailed measures to be developed in coordination with the local sheriff and fire departments)
- Measures to accommodate potential school bus reroutes and reduce potential school bus delays (detailed measures to be developed in coordination with the school district and sheriff departments)
- Construction site parking
- Construction signage

The Construction Traffic Control Plan shall be prepared in coordination with, and approved by, affected agencies, such as Caltrans, Glenn County, Colusa County, and Maxwell Unified School District.

Noise

Mitigation Measure Noise-1a: DWR and Reclamation Shall Include in the Construction and Maintenance Contracts Specifications to Reduce Noise Levels

DWR and Reclamation shall include in both the construction and maintenance contracts the specifications indicating the requirements listed below. DWR's and Reclamation's intent is that all Project construction noise-related impacts at noise-sensitive receptor property boundary lines be minimized or eliminated completely to the extent feasible, and/or that construction noise levels at noise-sensitive receptor property boundary lines not exceed 60 dBA. The construction contractor may propose other methods to sufficiently reduce construction noise levels if it can be demonstrated that those methods are implementable and suitable for the particular location and situation:

- **Local requirements.** Project construction and maintenance activities shall follow local requirements to the extent possible.
- **Portable barriers.** Portable barriers shall be used to shield noise from compressors and other small stationary equipment used during Project construction and/or maintenance if the construction or maintenance activity occurs near a residence.
- **Equipment.** Quiet equipment (for example, equipment that incorporates noise-control elements into the design; compressors can be quiet models) shall be used during Project construction and/or maintenance whenever possible. Preventive maintenance on equipment, including practicable methods and devices to control, prevent, and minimize noise, shall be performed on a regular basis. To the extent feasible, portable and stationary equipment shall be located, stored, and maintained as far as possible from nearby residents.

- **Exhaust.** Equipment exhaust stacks and vents shall be directed away from residential buildings.
- **Truck traffic routing.** Project construction and/or maintenance truck traffic shall be routed away from noise-sensitive areas where feasible. Truck companies that would transport Project construction equipment and/or materials shall be informed that air braking along haul routes where there are residences shall be prohibited.
- **Construction activity scheduling.** To the extent feasible, Project construction activities shall be scheduled so that the activities that are the noisiest occur when ambient noise is also at its peak.
- **Residential notification.** DWR and Reclamation shall notify residents near the Project facility site(s) of the timeframe for Project construction and maintenance activities. In addition, DWR and Reclamation shall notify residents near the Project facility site(s) if nighttime Project construction and/or transportation/delivery of construction vehicles, equipment, or materials is necessary. Such notification would occur prior to such activities occurring.
- **Addressing noise complaints.** If complaints from residents that are located near Project facility locations are received due to nighttime Project construction activities, the construction contractor shall monitor construction noise levels at the property line of the affected residence(s). If the construction noise exceeds the applicable noise standard, the responsible construction activity shall cease until feasible measures are implemented to reduce nighttime noise levels.

Mitigation Measure Noise-1b: Design Facilities to Incorporate Noise Mitigation

During Project design, all facilities shall be designed to incorporate noise-reducing features to comply with applicable noise regulations and/or guidelines. Noise-reducing features could include, but are not limited to, acoustically rated wall, ceiling, and door assemblies, and silenced building ventilation; and acoustical treatments on above-ground piping and valving.

Mitigation Measure Noise-2: Develop and Implement a Vibration Monitoring Plan

During Project design, a vibration monitoring plan shall be prepared for construction activities that would require pile driving or excavation. The plan shall be implemented during Project construction to ensure that no vibration-related damage is caused by Project-related construction activities.

Public Health and Environmental Hazards

Hazardous Materials and Wildland Fires

Mitigation Measure SW Qual-1e: Prepare and Implement a Stormwater Pollution Prevention Plan

DWR and Reclamation shall prepare and implement a SWPPP that emphasizes proper hazardous materials storage and handling procedures; shall outline spill containment, cleanup, and reporting procedures; and shall limit refueling and other hazardous activities to designated upland areas. Signs prohibiting refueling shall be posted in sensitive areas. Equipment shall be inspected prior to use each day to ensure that hydraulic hoses are tight and in good condition. Other appropriate BMPs, such as use of concrete washout basins and proper waste management, combined with visual observation and water sample collection and analysis, shall be used to prevent discharge of drilling mud and other chemicals associated with construction activities and into receiving waters. Details of these BMPs are described in Section WM-4 of the Construction Site Best Management Practices Manual (Caltrans, 2003).

Mitigation Measure GW Qual-1b: Implement DWR and County Standards for the Proper Abandonment of Wells, Boreholes, and Septic Systems

According to DWR's Water Well Standards (DWR, 2012), a well that is no longer useful (including exploration and test holes) must be destroyed to assure that the existing groundwater quality and proposed Project water quality is protected and preserved for further use, and to eliminate any potential physical hazard. Destruction of a well shall consist of the complete filling of the well in accordance with the procedures described in DWR Water Well Standards Section 23. Permits for well destruction shall also be obtained from the appropriate County agency (Glenn or Colusa).

Any current or historic oil and gas wells detected within the Project facility footprints shall be addressed. Any well types that would be inundated shall be properly sealed and abandoned according to policies and procedures laid out in the California Code of Regulations Title 14 from the Department of Conservation. These wells shall be sealed to ensure that the existing groundwater quality is protected and preserved, and to eliminate any potential physical hazard. Permits for well destruction shall also be obtained from the appropriate County agency (Glenn or Colusa).

Any test holes, boreholes, other potential conduits to groundwater shall also be sealed and destroyed.

Existing septic systems, such as septic tanks, cesspools, and seepage pits, shall be identified and located. These septic systems shall then be properly abandoned and demolished, and, if necessary, removed and disposed of. Destruction of septic systems shall require:

- A licensed septic tank pumper to pump the septic tank. A copy of the receipt for this pumping shall be obtained.
- Abandonment of the tank in accordance with county ordinances, which may include methods such as:
  - Tank removed, then disposed of at a sanitary landfill
  - Tank top removed, tank crushed, then excavation filled with earthen materials to within 12 inches of native surface
  - Tank top removed, bottom perforated, then excavation filled with earthen materials to within 12 inches of native surface

Permits for abandonment and destruction shall also be obtained from the appropriate County (Glenn or Colusa) prior to work.

Mitigation Measure Pub Health-4: Dispose of Hazardous Waste Discovered during Project Construction Pursuant to CERCLA Requirements

If evidence of contaminated materials is encountered during Project construction, construction shall cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act (CERCLA) and the CCR Title 22 regarding the disposal of waste shall be implemented.

Mitigation Measure Trans-1: Prepare and Implement a Project Operation Traffic Control Plan

DWR and Reclamation shall prepare and implement an Operation Traffic Control Plan for the Project. Consultation with Glenn and Colusa counties shall occur to determine what those agencies would require to manage the traffic congestion that is expected to occur as a result of recreationists traveling to Sites Reservoir and its Recreation Areas. It is possible that the Counties may want to wait to do any road

improvements until a recreation season (or more) has passed, so that actual recreation visitation and associated traffic congestion on local roadways could be monitored.

Consultation and coordination with Caltrans shall also occur to manage traffic at onramps and offramps from I-5 that would connect to the County roads leading to Sites Reservoir and its Recreation Areas.

Consultation with local fire and sheriff departments shall occur to obtain input regarding maintaining adequate emergency response times and access to properties along the roads that comprise the routes to Sites Reservoir and its Recreation Areas.

The Operation Traffic Control Plan may include, but not be limited to, ideas such as:

- Widening the existing County roads that comprise the primary route to Sites Reservoir and its Recreation Areas, and maintaining such roads
- Signalizing or signage at intersections along the primary route to Sites Reservoir and its Recreation Areas
- Developing alternate routes to Sites Reservoir that would intersect at Maxwell Sites Road and signalizing that intersection
- Providing bus service to Sites Reservoir and its Recreation Areas and providing a Park and Ride Lot at the bus pickup location
- Provisions for maintaining emergency vehicle access (detailed measures to be developed in coordination with the local sheriff and fire departments)
- Provisions to reduce potential school bus delays that may occur as a result of Project recreation visitation traffic (detailed measures to be developed in coordination with the local school district and sheriff departments)
- Directional roadway signage to Sites Reservoir and its Recreation Areas

The Operation Traffic Control Plan shall be prepared in coordination with, and approved by, affected agencies, such as Caltrans, Glenn County, Colusa County, and Maxwell Unified School District.

Mitigation Measure Trans-3: Prepare and Implement a Project Construction Traffic Control Plan

DWR and Reclamation shall prepare and implement a Construction Traffic Control Plan for the Project. The Construction Traffic Control Plan shall include, but would not be limited to, the following measures that are intended to manage:

- Construction-related traffic
- Temporary and/or permanent bus reroutes
- Pavement repairs before and after construction
- Measures to reduce emergency vehicle delay and maintain emergency vehicle access (detailed measures to be developed in coordination with the local sheriff and fire departments)
- Measures to accommodate potential school bus reroutes and reduce potential school bus delays (detailed measures to be developed in coordination with the school district and sheriff departments)

- Construction site parking
- Construction signage

The Construction Traffic Control Plan shall be prepared in coordination with, and approved by, affected agencies, such as Caltrans, Glenn County, Colusa County, and Maxwell Unified School District.

Mitigation Measure Pub Health-6: Develop and Implement a Project Fire Prevention and Suppression Plan and Consult with Fire Protection Agencies

DWR and Reclamation shall include in the construction contract specifications the following requirements. Prior to the start of Project construction, the construction contractor shall coordinate with the fire protection agencies that would serve the Primary Study Area regarding their requirements for preventing and suppressing fires during Project construction, operations, and maintenance. This effort shall include the preparation and implementation of a Project Fire Prevention and Suppression Plan that shall provide requirements that the contractor(s) shall follow while constructing Project facilities. The Plan shall also provide requirements for operation and maintenance activities. The Plan shall include, but shall not be limited to, the following requirements:

- Equip all diesel and/or gasoline-operated engines (stationary and mobile) with spark arresters
- Provide fire-fighting equipment on each piece of heavy equipment and construction vehicle
- Clear equipment service areas, parking areas, and gas and oil storage areas of all flammable material
- Prohibit smoking at Project facility construction sites during fire season, except in barren areas or in an area cleared to mineral soil at least three feet in diameter (CPRC 4423.4). In areas closed to smoking, the permit administrator may approve special areas to be used for smoking. The Contractor shall assign designated smoking areas. Signs shall be posted at Project facility construction sites regarding smoking and fire rules in conspicuous places. Under no circumstances shall smoking be permitted during fire season while workers are operating light or heavy equipment, or walking or working in grass and woodlands.
- Confine welding activities to cleared areas having a minimum specified radius
- Furnish a full water tank truck with fire hose at Project facility sites
- Maintain minimum vegetation clearance distances
- Establish long-term fuel management requirements
- Notify the local fire protection agencies of any fires along roads or within or near the Project facility sites as soon as feasible, after initial control action is taken
- Provide an on-site fire patrol person who shall patrol all Project facility sites during Project construction for the purpose of preventing and detecting fires and taking suppression action where necessary
- Furnish an agreed upon communications system connecting each Project facility construction site with the local fire protection agencies

In addition, DWR and Reclamation shall include into the construction contract specifications the following requirement:

- Prepare a Project-specific Emergency Evacuation Plan that includes a Project-specific contingency plan for fires, and submit the Plan to the agency or agencies with jurisdiction before Project site activities commence.

Mosquitoes and Other Vectors

Mitigation Measure Pub Health-9a: Develop and Implement a Stormwater Pollution Prevention Plan

The Project construction contractor shall develop and implement a Stormwater Pollution Prevention Plan that includes, but is not limited to, BMPs for minimizing on-site stormwater. In addition, the Plan shall include measures to minimize construction worker exposure to mosquitoes.

Mitigation Measure Pub Health-9b: Develop and Implement a Mosquito, Vector, and Other Nuisance Problems Control Plan

DWR and Reclamation shall prepare and implement a Mosquito, Vector, and Other Nuisance Problems Control Plan for the Project, in consultation with the Glenn County Mosquito and Vector Control District and the Colusa Mosquito Abatement District. This Plan shall include, but not limited to, the following:

- Conduct routine inspection and virus surveillance activities within the Sites Reservoir and its Recreation Areas, as well as the TRR and Holthouse reservoirs, and the forebay/afterbay at the Delevan Pipeline Intake Facility.
- Site managers shall eliminate unnecessary standing water in containers, old tires, or trash receptacles,
- Clean all rain gutters, storm drains, or similar features that could capture water.
- Minimize places where mosquitoes, ticks, rodents, or rattlesnakes may inhabit by removing heavy brush, trimming and pruning landscape shrubs, and mowing grass areas regularly.
- Install bird nesting boxes to encourage birds that feed on mosquitoes, midges and other vectors or nuisance species.
- Stock the reservoirs with fish that feed on mosquito larva and pupa.
- Provide printed materials at each recreation area that informs the recreationists (particularly recreationists using the Sites Reservoir and hikers using the trail system) to protect against mosquito, tick, stinging insect, flea, rattlesnake bites, poison oak, and to minimize exposure to Giardia and Swimmer's Itch. Such information shall include, but is not limited to, instructions to: (1) wear clothing that covers arms and legs and use a repellant that contains DEET; (2) never go barefoot or wear sandals when walking through wild areas (wear hiking boots); (3) stick to well-used trails when hiking; (4) avoid tall grass, weeds, and heavy underbrush; (5) never step or put your hands where you cannot see, and avoid wandering around in the dark; (6) step on logs and rocks, never over them, and be especially careful when climbing rocks or gathering firewood; (7) check out stumps or logs before sitting down, and shake out sleeping bags before use; (8) never grab "sticks" or "branches" while swimming in lakes and rivers (rattlesnakes can swim); (9) never hike alone (always have someone with you who can assist in an emergency); (10) never handle a freshly killed snake (it can still inject venom); (11) teach children to respect snakes and to leave them alone; (12) avoid contact with wild

rodents and their fleas, especially sick rodents; (13) minimize pet contact with rodents; (14) never camp near animal burrows; (15) never feed rodents; (16) store food and garbage in closed containers; and (17) explain how to identify poison oak and include a photo of poison oak leaves.

- Conduct routine inspections of all pipelines and other water conveyance structures for aboveground leaks that could create standing water. Repair all leaks in a timely manner.
- Provide covered trash receptacles within the recreation areas. Perform timely and frequent emptying of trash receptacles and cleanup of food spillage. Provide signs that encourage recreationists at these areas to cover and store food promptly after eating, and to properly dispose of food packaging and waste. Encourage recreationists to leave the areas as clean as possible to discourage foraging rodents, flies, and biting/stinging insects.
- Conduct routine inspections of property for stinging insect nests and remove them, if necessary, to avoid public health or nuisance issues.
- Promptly remove from property all dead animals, carnage, or animal feces.

Public Services and Utilities

Mitigation Measure Services-1a: Avoid Damage to or Disruption of Existing Utility Services

To minimize impacts to utility service providers by damage or disruption caused by the Project's construction, operation, and/or maintenance, DWR and Reclamation shall implement the following measures during Project construction to minimize impacts to existing utility infrastructure (whether it is currently identified or is discovered during Project construction):

- **Permits:** The Construction Contractor shall obtain utilities excavation or encroachment permits, as necessary, before initiating any work with potential to affect utilities.
- **Locating Line:** Utility locations shall be identified through field surveys and the use of the Underground Service Alert services. Any buried utility lines shall be clearly marked before initiation of any ground-disturbing construction activity.
- **Clearing Right-of-Way and Road Access:** If necessary, infrastructure shall be removed or reinforced in coordination with all potential service providers known to have, or potentially having, utility infrastructure in the vicinity of the Project facility.
- **Response Plan (Construction):** The Construction Contractor shall prepare a Response Plan to address potential accidental damage to utility infrastructure prior to the start of Project construction. The Response Plan shall identify chain of command rules for notification of authorities and appropriate actions and responsibilities to ensure the safety of the public and workers. The Response Plan shall be circulated to the potentially affected service system providers for review and approval prior to the start of the construction activities. Worker education training in response to such situations shall be conducted by the Contractor.
- **Response Plan (Operation and Maintenance):** DWR and Reclamation shall prepare a Response Plan to address potential accidental damage to utility infrastructure prior to the start of Project operation. The Response Plan shall identify chain of command rules for notification of authorities and appropriate actions and responsibilities to ensure the safety of the public and Project facility

personnel. The Response Plan shall be circulated to the potentially affected service system providers for review and approval prior to the start of Project operation. Worker education training in response to such situations shall be conducted by DWR and Reclamation or such party that they designate.

Mitigation Measure Services-1b: Perform Utility Relocation or Modification

For each section of a utility line that would need to be relocated or modified as a result of Project construction and/or operation, DWR and Reclamation shall implement the following measures:

- **Permits:** The Construction Contractor shall obtain utilities excavation or encroachment permits, as necessary, before initiating any work with potential to affect utility lines.
- **Locating and Staking Line:** Locations for relocated utility lines shall be identified in coordination with affected service providers. As part of this effort, field surveys shall be conducted and the Underground Service Alert services shall be used to ensure that there are no conflicts with other existing utility lines. After the alignment of the line has been determined, a survey shall be conducted to map the route of the line. The results of the survey shall be plan and profile drawings, which shall be used to spot the poles and/or towers. After exact positions have been fixed, a stake shall be driven to indicate the center of the structure or pole.
- **Utilities Modification and Relocation Plan:** The Construction Contractor shall prepare a Utilities Modification and Relocation Plan prior to the start of Project construction. The Utilities Modification and Relocation Plan shall identify chain of command rules for notification of authorities and appropriate actions and responsibilities to ensure the safety of the public and workers and include a description of how utilities infrastructure shall be modified or relocated and identification of precise alignment where utility lines shall be relocated. The Utilities Modification and Relocation Plan shall be circulated to the potentially affected service system providers for review and approval prior to the start of the Project construction activities. Worker education training in response to such situations shall be conducted by the Construction Contractor.
- The Construction Contractor shall stage utility line modifications and relocations in a manner that minimizes interruption of service.
- The Construction Contractor shall follow local, State, and federal regulations regarding utilities and service systems location and construction to minimize potential disruption of services and damage to the utilities and service system infrastructure.

Visual Resources

Mitigation Measure Vis-3a: Reduce Construction and Maintenance Impacts Causing Adverse Temporary Impacts on Visual Quality of the Site

To minimize the temporary construction impacts on visual resources due to substantial degradation of existing visual quality from construction and maintenance of the Road Relocations, South Bridge, TRR, TRR Pumping/Generating Plant, TRR Electrical Switchyard, TRR Pipeline, TRR Pipeline Road, Delevan Pipeline Electrical Switchyard, GCID Canal Connection to the TRR, and Delevan Pipeline, DWR and Reclamation shall:

- Water areas where dust is generated, particularly along unpaved haul routes and during earth-moving activities, to reduce impacts to views and the landscape caused by dust.

- Prohibit unnecessary ground disturbance outside of the construction disturbance area.
- Revegetate and restore disturbed ground surfaces at each Project facility to their original condition to the extent feasible.

Mitigation Measure Vis-3b: Reduce Operational Impacts Causing Adverse Permanent Impacts on Visual Quality of the Site

To minimize permanent impacts on visual resources due to substantial degradation of existing visual quality from operation of the Road Relocations and South Bridge, Field Office Maintenance Yard, Sites Electrical Switchyard, TRR, TRR Pumping/Generating Plant, TRR Electrical Switchyard, Delevan Pipeline Electrical Switchyard, GCID Canal Connection to the TRR, and Holthouse Reservoir Electrical Switchyard, DWR and Reclamation shall:

- Use native trees, bushes, and shrubs for screening at the Project facilities that may substantially degrade the existing visual character of the site(s), in a manner that does not compromise facility safety and access.
- Incorporate high quality site design and architecture in order to create an aesthetically pleasing built environment that does not detract from the rural nature of the surroundings.
- Retaining walls and erosion control devices or structures shall be sited, designed, and constructed to avoid detracting from the scenic quality of the area.

Mitigation Measure Vis-4a: Reduce Construction and Maintenance Impacts Causing Substantial Light or Glare

To minimize impacts on day or nighttime views due to substantial light or glare expected from construction and maintenance of the Recreation Facilities, South Bridge, TRR, TRR Pumping/Generating Plant, TRR Electrical Switchyard, TRR Pipeline, TRR Pipeline Road, Delevan Pipeline Electrical Switchyard, GCID Canal Connection to the TRR, and Delevan Transmission Line, DWR and Reclamation shall:

- Minimize light scatter and glare from portable temporary light sources that would be used for nighttime construction by using shielded and directional lighting, and install temporary visual barriers, as needed, to prevent light spill from equipment lighting in areas with sensitive receptors.
- Design, construct, and finish all new buildings and structures using non-reflective materials, non-glare finishes, and colors that would blend with the natural environment and not create a new source of glare.
- Design the transmission line structures to be similar in appearance to the existing transmission lines in the Project vicinity to the extent feasible. Use non-specular conductors and non-reflective and non-refractive insulators.
- Use minimal Project construction signs; signs that would be installed shall be made of non-glare materials, finishes, and unobtrusive colors to the extent possible. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

Mitigation Measure Vis-4b: Reduce Operations Impacts Causing Substantial Light or Glare

To minimize impacts on day or nighttime views due to substantial light or glare expected during operation of the Recreation Facilities, Road Relocations and South Bridge, TRR, TRR Pumping/Generating Plant, TRR Electrical Switchyard, Delevan Pipeline Electrical Switchyard, and GCID Canal Connection to the TRR, DWR and Reclamation shall:

- Use native trees, bushes, and shrubs for screening at Project facilities that may generate new sources of light or glare, in a manner that does not compromise facility safety and access.
- Minimize nighttime lighting to areas required for safety, security, and operations, and shield lighting from public view to the extent possible. Timers and sensors shall be used to minimize the amount of time that lights are on in areas where lighting is not normally needed for safety, security, or operation. Use shielded and directional permanent lighting.
- Use minimal Project signs; signs that would be installed shall be made of non-glare materials, finishes, and unobtrusive colors to the extent possible. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.
- Design and install guardrails and other roadway fixtures, including retaining walls, safety barriers, light standards, and other structures to adequately provide for the safety of the motorist using non-glare materials, unobtrusive colors, and flat finishes to minimize potential glare.

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